Canadian Conundrums

Views from the *Clifford Clark Visiting Economists*

Robert D. Brown,
editor

C.D. Howe Institute

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Foreword

The post of Clifford Clark Visiting Economist at the Department of Finance is an outstanding example of something many observers feel is all too rare in Canada. It provides an opportunity for a leading expert in economic and fiscal policy matters from outside the regular structure of the federal government to participate at the highest level in the Department of Finance's deliberations — a cross-fertilization of ideas that improves the understanding of the department and the outside world of each other's preoccupations and priorities and contributes to the making of better public policy in this country.

From the perspective of those who are interested in the development of public policy in Canada, the passage of time and of a number of people through the Clifford Clark position also provides a useful opportunity. The challenges that have preoccupied federal fiscal policy have changed over time, and the techniques of economic analysis have evolved as well. A survey of the views of Clifford Clark Visiting Economists over some two decades provides a unique high-level view of these changes, and throws light not only on past challenges, but also on the present-day policy issues that are their descendants.

We are delighted that Robert Brown agreed to serve as editor of this volume. The topics the contributors address vary from monetary policy through taxation, fiscal federalism, and the new economy. But the quality of the essays is uniformly high, a tribute not only to the contributors, but also to the Department of Finance for its consistent selection of outstanding holders of the Clifford Clark position.

The volume was copy edited by Lenore d'Anjou and prepared for publication by Marie Hubbs and Barry A. Norris. As with all C.D. Howe Institute publications, the analysis and opinions presented here are the responsibility of the authors and do not necessarily represent the views of the Institute's members or Board of

Directors. We commend them, however, to all those who are interested in the development of Canadian public policy in the past, and who hope for its continued improvement in the future.

William B.P. Robson
Vice-President and
Director of Research

Introduction

It was Jack Mintz, the indefatigable President and Chief Executive Officer of the C.D. Howe Institute and himself a former Clifford Clark Visiting Economist with the Department of Finance, who conceived the idea that a publication containing short essays by Clifford Clark alumni would be a worthwhile and welcome addition to the discussion of public policy issues in Canada. It would also mark the contribution that the position — and those who have occupied it — have made to policy development and the dialogue between the public and private sectors.

The Position and the Book

The Department of Finance established the position of Clifford Clark Visiting Economist in 1983 to provide senior policy input from outside the government into the department's planning and studies. Marshall Cohen, then deputy minister, wanted an opportunity for the department's leadership, up to and including the minister, to interact with an individual who was not part of the federal bureaucracy but who had the experience, the background, and the energy to bring fresh views and opinions into the policymaking process.

The new position was named after Clifford Clark, who was the deputy finance minister from 1932 through 1952 and who might be called the father of the modern department and of its strong influence on federal programs and policies. The choice of name

As one of the Clifford Clark alumni, I was delighted to have the opportunity of putting this volume together, but I must acknowledge the strong collaboration and editorial genius of the C.D. Howe Institute's Bill Robson, as well as the helpful suggestions of Jack Mintz and the support of Shay Aba. I also thank Lenore d'Anjou for her copy-editing skills, which helped to focus the writing, and Barry Norris and Marie Hubbs, who shepherded the volume through publication.

was particularly appropriate, as Clifford Clark's career had included stints in the academic and business worlds as well as the civil service. And throughout his distinguished service in government he drew on input and ideas from broad sources in his effort to practice what has been called *applied economics.* (A short biography of Clifford Clark follows this Introduction.)

From the beginning, the duties that the Clifford Clark Visiting Economist has undertaken have been flexible and eclectic, depending on the experience and interests of the individual and the exigencies of the moment. A unique feature of the position is that the appointee can generally select what he wishes to concentrate on and largely set the responsibilities. Some holders of the position have worked mainly on specific projects (Jack Mintz, for example, concentrated on the issue of business taxation and completing the Report of the Technical Committee, which he headed), while others have covered a range of issues and projects. In all cases, however, the appointee has been granted senior status within the department, receiving copies of all research papers and classified documents and participating fully in policy-setting meetings with the minister and the deputy minister. The appointment is generally for a two-year period, although there have been exceptions.

The individuals occupying the position have brought enthusiasm and imagination to their task, enjoying the open debate with the minister and senior department officials. Each gained a new respect for both the complexity of policy setting in a world of conflicting objectives and the dedication of the senior people with whom they worked. And each hoped that he was able to contribute some fresh insights to the policy formulation process.

The justification for a volume of essays by those who have occupied the position of Clifford Clark Visiting Economist does not rest on any claim of superior wisdom or insight, although I note that — myself aside — they form a remarkably distinguished group. Still less is the book based on any attempt to make the essays form an integrated commentary on even a few of the main economic policy issues of the moment. Rather, the C.D. Howe Institute sought to set out a cross-section of views on current questions from a recognized group of scholars and others with some common experience. And each author selected his topic with an eye on the notion

behind the Clifford Clark position itself: aiming to raise new insights and comments on an important current issue.

The fact that all the writers are Clifford Clark alumni means that they all have a background in both public policy formulation and the nongovernmental sector. Their experience in working on the cross-pollination of these solitudes means that they can claim some understanding of the strategic and practical factors involved with some current fiscal, monetary, and economic developments.

The essays in this volume cover a wide variety of topics, and the writers display a corresponding diversity of views and approaches. The articles are not written in a strictly academic style; rather, each author, working from his own background and approach, concentrates on informing and stimulating the broad debate on public policy issues in Canada.

The Visiting Economists

A total of eight men have served as Clifford Clark Visiting Economists since 1983, and a ninth will take up office soon. The initial holder of the position was Douglas Peters, who served from 1983 to 1985 and subsequently went on to a career in politics. Douglas Purvis, the second appointee (1985–86), was a respected and warmly liked figure in policymaking and academic circles, but is no longer with us.

We are delighted that the next six appointees agreed to contribute to this collection.

John F. Helliwell, 1987–88

The first essay is by John Helliwell, whose tenure in 1987 and 1988 punctuated a distinguished career in economics. Helliwell, whose interests are wide ranging, here explores some new paths in considering the determinants of subjective well-being: what influences people in deciding how well off they think they are.

To comment on how people value economic and social outcomes, Helliwell refers to empirical studies of self-perceived well-being.

His basic argument is that local, community, and national institutions and connections still matter, even in an age of globalization. He argues that it is therefore important for countries to have social and institutional fabrics that preserve and build mutual trust among citizens and between citizens and their governments. On this basis, he believes that we must consider limitations and costs in dealing with current trends to internationalization, both globally and in North America, and he cites some examples based on current issues. He concludes that maintaining a separate sense of Canadian identity has subjective but real advantages.

Charles Freedman, 1989–90

Charles Freedman served as Clifford Clark Visiting Economist in 1989 and 1990 and is now deputy governor of the Bank of Canada. Freedman begins his essay with a review of the principal objective of monetary policy — maintaining a stable price level. He then outlines how the instruments central banks use to determine their policies to meet this objective have changed over the years. They have now settled fairly firmly on the direct maintenance of inflation targets.

Freedman offers some thoughtful comments on how the linkages of one country's currency to that of another may assist in avoiding inflation but he notes that the difficulties of a "soft fix" or adjustable peg in foreign exchange markets are now becoming clearer. He argues that most countries are gravitating either to floating exchange rates or to fixed pegs, and he goes on to discuss how central banks are likely to meet their domestic and international objectives in the years ahead.

Kenneth Norrie, 1990–91

After his tenure in the Clifford Clark position in 1990 and 1991, Kenneth Norrie served as dean of arts and professor of economics at the University of Alberta. At the start of 2002, he became provost and vice-president academic at McMaster University.

In his essay, Norrie deals with the perennial Canadian issue of vertical fiscal imbalance — the argument that the distribution of fiscal resources in the Canadian federation is out of line with spending responsibilities. He points out that such an imbalance can occur when different levels of government do not have equal access to all significant revenue sources but he notes that both the provinces and the federal government have full rights in all major tax fields.

Norrie reviews recent communiqués from the provincial and territorial governments, based on simple projections of revenue growth in response to expected changes in gross domestic product (GDP) and price levels, and on changes in spending predicated on demographic and other trends. The federal government usually shows more favourable fiscal results in such projections, in good part because it has the larger share of the personal tax field, a relatively elastic source of revenue. But this situation does not explain why the provinces do not simply raise their own taxes to cover the perceived imbalance, instead of perennially looking for more transfers from Ottawa. And, Norrie points out, such simplistic revenue and spending projections are frequently flawed guides to future budgetary positions and, therefore, the fiscal imbalance arguments do not seem fully supportable. Fiscal balance is not a fundamental characteristic of intergovernment fiscal structure; rather, it is a political choice.

After a brief review of the history of federal transfer payments to the provinces, Norrie concludes by noting that Ottawa has given up matching transfers to provincial spending; instead, it has adopted the maintenance of national standards as the primary purpose of the existing transfers.

Peter J. Nicholson, 1994–95

Peter Nicholson, who served as Clifford Clark Visiting Economist in 1994 and 1995, is now Special Advisor to the Secretary-General of the Organisation for Economic Co-operation and Development in Paris. In his essay, he deals with a subject dear to his heart and interests: the information revolution, particularly the Internet.

Although we have all heard how the Internet is transforming our society, perhaps few of us appreciate that the rate of change is still accelerating. Nicholson points out that the Internet — a vast network neither owned nor controlled by anyone — is continuing its rapid evolution, driven by fast-paced changes in communications and technology, and that its uses are truly open ended, much like human intelligence itself. Internet-related costs are continuing to fall — perhaps by a factor of a thousand over the next 15 years — opening up the possibility that almost all recorded information, worldwide, will soon be available to more than a billion users.

Like most transformation technologies, the Internet revolution has resulted in overinvestment and speculative excess. But the expansion of the Internet and its related processes continues to boost the percentage of GDP spent on information, with the biggest economic positives coming from the reduction in inventories and the general growth in productivity that this facilitates.

Nicholson goes on to consider Canada's position in this revolution. Our best policy, he says, is to carve out global niches for concentration. In this new world, the preferred role of government is not to subsidize or direct but to lead by example by building world-class information systems in areas such as health and education.

Jack M. Mintz, 1996–97

In addition to his C.D. Howe Institute responsibilities, Jack Mintz, who held the Clifford Clark post in 1996 and 1997, teaches at the Joseph L. Rotman School of Management, University of Toronto, and is a distinguished and frequent commentator on fiscal policy issues.

Mintz concentrates on twin challenges to Canadians' well-being: our mixed and rather undistinguished record on productivity, and our looming demographic time bomb. He focuses first on the interplay of deficits, taxes, and productivity, arguing that Canada's past poor fiscal performance — monster deficits, high debt, high taxes, and waste in ineffective programs — has impaired our productivity performance in recent years. Spending priorities have overemphasized counterproductive employment insurance and other social spending (including regional development), while

interest on the debt has grown because of past spending excesses. Mintz argues that government priorities are shifting in Canada, but not fast enough. Tax burdens on labour and capital remain high, and Canadians' long-term prosperity is still threatened by inadequate investment.

Mintz further argues that Canada also faces a challenge from its aging population — indeed, Canada's demographics are relatively worse than those of the United States — which promises to put new strains on the country's fiscal resources. He concludes that we need smarter debt management, smarter spending, and smarter taxes.

Robert D. Brown, 1998–2001

I had the privilege of being the Clifford Clark Visiting Economist from 1998 to 2001, following a term as chairman and chief executive officer of Price Waterhouse. I have now fallen to the positions of consultant, corporate director, and sometime commentator.

My essay, the final one in this volume, deals with Canada's perceived high tax burden — from the point of view of exploring just what we get for the extra 9 percent of GDP we pay in taxes relative to our neighbours to the south. I argue that, in themselves, high taxes are not necessarily a negative influence on well-being if they pay for productive and efficiently delivered services and benefits, such as education, income security, and health. But the biggest part of Canada's higher taxes seems to go not to our vaunted social programs but to unfocused expenditures on regional support, business subsidies, economic adjustment programs, and a wide variety of other miscellaneous spending. This spending adds relatively little to our well-being, particularly since we seem to concentrate on inputs (how much we spend), rather than on outputs (the actual results of the spending).

Canada's higher overall spending, with its resulting tax and debt burdens, impairs our productivity and living standards. In the long run, if our productivity and after tax-incomes continue to lag further and further behind those of Americans, our ability and willingness to support Canadian social programs may be undermined. Indeed, the impact of Canadians' lower incomes on social pro-

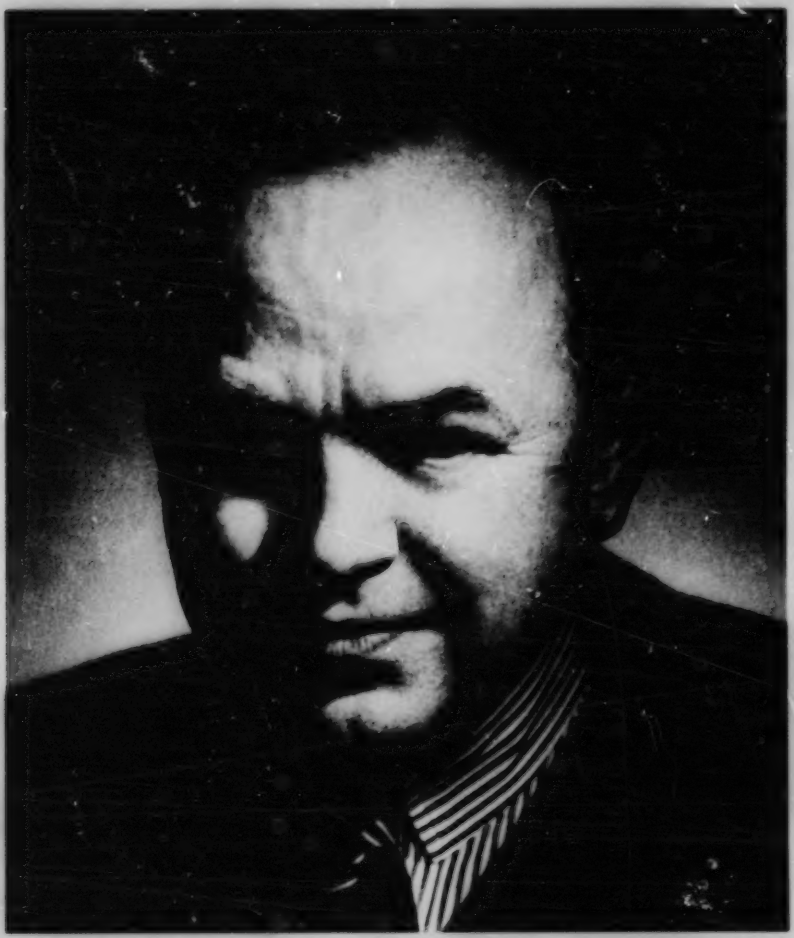
grams is already apparent. For example, although Canada spends a slightly higher proportion of its GDP on education than does the United States, Americans spend more in public funds per student than we do because their incomes are higher.

Canadians have choices, and we can maintain policies different from those of the United States if we want to. We need to learn, however, that efficiency and effectiveness are not inconsistent with Canadian values but, rather, a way of making those values real.

In the End...

The justification for the position of Clifford Clark Visiting Economist is the benefits that flow from involving an outside expert in the process of public policy research and formulation. The contributors to this volume hope that it illustrates in at least some small way some of those benefits, and stimulates public discussion on issues of importance to all Canadians.

Robert D. Brown



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Clifford Clark,
1889–1952

A Biography of Clifford Clark

William Clifford Clark was a distinguished Canadian public servant whose 20-year career with the Department of Finance spanned the Great Depression, World War II, and the reconstruction period that followed it. He played a large role in transforming the department and Canadian fiscal and economic policy to meet the needs of an emerging nation. His peers judged him to have had "outstanding success in bringing applied economics to the art of government."*

Clifford Clark was born in 1889 and grew up on a farm in Glengarry County, Ontario. Regarded as a bright scholar, he entered Queen's University at the age of 16 and graduated a few years later with an MA after having completed honours programs in Latin, French, English, History, and, latterly, Political Science and Economics. In 1912, he went to Harvard University for postgraduate work in Economics, but returned to Queen's in 1915 to take up a teaching position. There, he showed a leaning toward applied economics. He was the first head of the Commerce program at Queen's, established a training program for Canada's chartered accountants, and worked on courses for bankers.

While valuing his academic career and the friends he made in it, Clark liked to apply his ideas. He accepted an offer from a US investment broker to become one of the first business economists in North America, and spent the next eight years in Chicago and New York. Despite the fact that Clark had urged caution and conservatism in the booming bull market of the late 1920s, his employer became a victim of the 1929 crash, and Clark returned to Queen's in 1930 to resume a teaching career.

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* R.B. Bryce, "William Clifford Clark, 1889–1952," *Canadian Journal of Economics and Political Science* 19 (August 1953): 423.

Clark was, however, drawn to public affairs, and was one of the economists seconded to the federal government to prepare Canada's position for the Imperial Economic Conference of 1932. This work led to his being noticed by Prime Minister R.B. Bennett, who offered him the position of deputy minister of finance. Clark accepted, and spent the rest of his life with the department.

On taking up his new responsibilities, Clark found the department engaged largely in administrative tasks relating to the public debt and the federal government's accounts, and with little ability to advise on the economic forces that were savaging the nation. Clark worked to transform the department into an organization devoted to understanding Canada's economy and to providing an analysis of the policy options facing the government in many critical areas.

As a good civil servant, Clark worked behind the scenes, advising the minister of finance and, on occasion, the cabinet and the prime minister on issues and proposals. But Clark's influence was felt on almost all of the major economic and fiscal programs Ottawa faced through the turbulent years of depression, war, and postwar economic transformation.

Clark played a key role in the establishment of the Bank of Canada in 1934. (Indeed, the press identified him as the "godfather" of the Bank.) He served on the Bank's Board of Governors for many years, cementing close relations between the Bank and the Department of Finance. Clark was also interested in policies relating to housing, and helped initiate various programs for its financing. Federal-provincial finances, financing the public debt, and managing relief programs all received his attention in the 1930s. During World War II, he helped mobilize the nation's finances for the war effort in his position as chairman of the Advisory Committee on Economic Policy, which dealt directly with the cabinet and integrated fiscal and monetary policies with the impact of war spending and resource allocation.

As the war neared its end, Clark became heavily involved in reconstruction efforts. He helped to set up the Industrial Development Bank, establish export credit mechanisms, and revise the *Bank Act*. In the international area, he was engaged in planning for the Hyde Park Agreement, dealing with Canada's external finances.

On a broader front, Clark, whose views on fiscal matters had originally been fairly conservative, digested new ideas and trends (he attended meetings with John Maynard Keynes). He concurred with the White Paper on Reconstruction Policy that C.D. Howe presented to Parliament in 1945, which explicitly supported counter-cyclical budgeting.

Clark was instrumental in transforming the Department of Finance into the very centre of policymaking within the federal government. He developed the annual cycle of fiscal and tax policy reviews in budgets, and built up a cadre of economists and other professionals who influenced the government's programs across a broad spectrum.

Right up to his sudden death in 1952, Clifford Clark worked tirelessly, if largely anonymously, to transform not just his department, but also the government to better serve his fellow Canadians. He is rightfully known as the father of the Department of Finance and its influence on public policy. His intellect and energy, his imagination and his firm dedication to the public service, mark him as an outstanding Canadian.

Policies to Improve Well-Being

John F. Helliwell

When I was Clifford Clark Visiting Economist at the Department of Finance in 1987 and 1988, I was much involved in modelling the extent of international linkages, and I wrote my first paper with globalization in its title as a contribution to a panel discussion held at the time of the 1988 summit of the Group of Seven (G-7) held in Toronto. The Finance Department was also busy at that time modelling the likely consequences of the Canada-US Free Trade Agreement (FTA) then being negotiated with the United States. What has happened since? And what are the policy implications of subsequent events and research?

Three Watersheds

I think of three important watersheds. The first was the 1989 fall of the Berlin Wall and the associated political and economic opening of eastern Europe and the former Soviet Union, matched initially by echoes of democracy in China, which were suppressed in the same year. That history taught me the enormous importance of local and national norms and institutions and revealed the inability of openness to ensure, via some invisible hand, the transfer of rules for a new social and economic order. Indeed, the experience showed not just that good institutions and norms do not spring up in a social vacuum but also that their malign counterparts, such as the Mafia, thrive in an institutional vacuum, choking the subsequent growth of more benign ways of organizing life.

The second was the discovery, by John McCallum in the early 1990s, that Canadian interprovincial trade linkages were more than

20 times tighter than those between Canadian provinces and US states (see McCallum 1995). His data referred to 1988, the year when I was the Clifford Clark Visitor writing about globalization, characterizing modern manufacturing as typified by "bits and pieces from all over." I subsequently discovered (as reported in my 1998 Brookings Institution book *How Much Do National Borders Matter?*) that the differences between national and international economic densities are even greater for services than for goods, greater still for migration, and dramatically large for savings, investment, and the spillovers from research and development. Parallel results are found for other countries, even within the much more complete linking of national economies within the European Union, with or without the use of a common currency. These results helped me to understand why the FTA has led to north-south trade increases twice as great as predicted by the economic models the Department of Finance used in 1989 (since there was such a large gap between east-west and north-south trade before the FTA) while the productivity gains have been much smaller than forecast. The expected productivity gains were supposed to come from greater scale and specialization. In the event, the size of the national border effects, coupled with the high per capita gross domestic product (GDP) figures for the smaller economies of the Organisation for Economic Co-operation and Development (OECD), imply that the major productivity gains from international trade among the industrial countries had already been achieved before the FTA.

The third watershed was provided by multidisciplinary research on social capital, especially recent research into the determinants of subjective well-being. Starting with Robert Putnam's research on the regions of Italy (1993), and more recently his magisterial study of trends in participation and trust in the United States over the twentieth century (2000), a large body of results now shows trends and large international (and often interregional) differences in the norms and networks that provide the means for communities to operate successfully.

A recent OECD report (2001, 41) defines social capital as "networks together with shared norms, values and understandings that facilitate co-operation within or among groups." The fact that such networks are far more dense within national boundaries than

across them helps to explain why economic relations are so much denser among Canadian provinces than between those provinces and US states.

The OECD study surveys the available evidence on the importance of human and social capital to well-being. Some forms of social capital — the Mafia and the Ku Klux Klan are obvious examples — are put to malign rather than benevolent uses, just as can happen with physical and human capital. Analysts often distinguish between "bridging" and "bonding" social capital, with the latter type more likely to increase the risk of conflict across cultural and national divides. Thus, some of the increases in trust within the United States since September 11, 2001, as measured by Putnam (2002) and other surveyors, may represent an increase in national bonding in the face of external threat. On the other hand, rediscovery of the importance of family and community can have positive international spillovers, as represented by Peace-Corps-type activities of helping others to help themselves, building internationally bridging social capital in the process.

Well-Being

Although social capital studies have, in the main, focussed on the extent to which human and social capital facilitate economic progress, both directly and via their positive interactions with each other, analysts are now turning their attention to empirical studies of well-being, which provide hitherto unavailable measures of how people value economic and social outcomes.

I have made extensive use of World Values Survey data (Inglehart et al. 2000) collected over 20 years, from almost 80,000 respondents in up to 50 countries. The aim is to explain differences among individuals in their answers to a question about their well-being — their general satisfaction with their lives. Many people are satisfied with their lives; the global average answer is 6.8 on a ten-point scale. However, countries and regions exhibit large differences, as do individuals within the same country. For example, the sample average value for well-being is 4.96 in the countries of the former Soviet Union and 6.23 in eastern Europe but rises to 7.72 in the United States, 7.86 in Canada, and 7.94 in Scandinavia.

I have analyzed these data extensively (Helliwell 2002a; 2002b) to see if individual and societal variables can be combined to explain differences in life satisfaction among individuals and among countries. At the individual level, the explanatory variables include a subjective measure of physical health, age group, marital status, income by decile, whether one is unemployed, education level, and several measures of social participation and norms, including whether one thinks that other people can generally be trusted, whether one attends church once a week or more, whether God is very important to one's life, how many non-church community groups one is a member of, and whether one thinks that it is ever justifiable to cheat on taxes. The results replicate earlier research that shows strong positive well-being effects from the subjective state of physical health, marriage, and the avoidance of unemployment. Once the analysis makes separate allowance for health, income, marital status, and so on, the age effect has a clearly defined U-shaped pattern, with well-being lower in the early 40s than at either end of the age spectrum, and higher for the over-65s than for those in the youngest age group (18- to 24-year olds). Well-being rises with the individual's relative income until the middle of the national income distribution and then tapers off. The effects of education are strongly positive when assessed on their own, but in the full model these effects largely fall off, at both the individual and the societal levels, when account is taken of the various explicit channels through which education has its effects on well-being.

Memberships, trust, and values all have independently important effects at the individual level. Both aspects of religion — regular church-going and belief in the importance of God — are associated with significantly higher subjective well-being. The same is true for membership in non-church community organizations. Subjective well-being is significantly higher for those who think that, in general, others can be trusted and that it is never justifiable to cheat on taxes.

The estimated individual-level effects are statistically significant and large compared with the effects of higher incomes. For example, the combined effects of church-going and belief in God are almost as large as those involved in moving from the very bottom to the top of the income distribution. And to believe that it is never right to cheat on taxes has the well-being equivalent of several

deciles' increase in relative income. (These effects are all at the individual level, and they may be either augmented or reversed by those at the national level.)

Since only relative income appears at the individual level, one expects to find that those living in richer countries have higher subjective well-being, at least for movements from poverty to some level of affluence. This relationship is indeed the case, although diminishing returns are also at play here. Moving from poverty to middle-income levels (in terms of average national real GDP per capita) is matched by significant increases in national average well-being, but this effect lessens as one goes up the world income distribution and becomes insignificantly small at the top end. When the individual- and national-level income effects are combined, there is evidence of negative externalities, in the sense that increases in average national income, in the absence of increases in an individual's own income, reduce reported life satisfaction.

By contrast, the external effects of the social capital variables are generally significantly positive. Higher average participation in community organizations is associated with higher subjective well-being, even among those whose own participation is unchanged. Similarly, living in a high-trust nation or one where others think that it is wrong to cheat on taxes increases subjective well-being. Since this result is derived from an equation that already takes into account the individual's own participation and beliefs, it cannot simply reflect unmeasured personality differences. Thus, these two-level results provide strong evidence of the positive well-being effects of living in a society with a high level of social capital.

A final reminder: all these effects of social capital are above and beyond the effects the factors may have as they flow through health or incomes. The effects of social capital on health and hence indirectly to well-being have been long studied and fully documented elsewhere (for references, see OECD 2001; Helliwell 2002a; 2002b).

Policy Implications

Together, my three watersheds have several implications for national policies. First, the economic and social separation of nation-states

is large enough to permit — indeed, to require — policy attention to national preferences. The raw data show Canadians' subjective well-being lying between that of Americans and the much higher levels of Scandinavians, just as historically has been true for economic and social policies. The model results explain most of the international differences in subjective well-being and indicate that for Canada to move further toward the United States along both the societal and the economic dimensions is more likely to lead to a drop in well-being than to an increase.

The results to date are still tentative, but the strongly positive effects of various measures of social capital show the importance of evaluating international and domestic policies in the light of their likely effects on well-being. The combination of the borders and the well-being results strengthens my belief that to move now to a higher level of North American economic integration would be a mistake. The economic arguments for Canada to adopt the US currency are weak and ambiguous in sign. Along all other dimensions, the case strongly favours a separate Canadian currency as an important support for economic, social, and political independence. For Canada to play a useful mediating role in world affairs, independence is an essential asset.

What is much clearer now than in 1989 is the importance of countries' having social and institutional fabrics that preserve and build mutual trust among citizens and between citizens and their governments. Countries that are lucky along both the economic and social dimensions, such as Canada and especially the Scandinavian countries, have special obligations as well as opportunities to facilitate the building of high-quality institutions in other countries still struggling to match the opportunities and risks of greater openness. Smaller countries (if Canada can still be so considered) are better placed than the traditional great powers to provide such assistance, as it is less likely to be considered to have strings attached.

The Importance of the Social Fabric

The well-being research suggests that the importance of the social fabric is even greater than previously thought, thus tilting any perceived tradeoff between increasing income and sustaining the social

fabric toward the latter. The September 11 terrorist attacks, which themselves surely mark another historic watershed, have made the same case even more strongly. Some Americans described the attacks, by analogy with Pearl Harbor, as the start of a third world war. Canadians, with still-vivid memories of the Front de libération du Québec (FLQ) kidnappings and murder of 1970 and of the Air India sabotage of 1985, find it more natural to treat the new terrorism as the work of extremists' clandestine cells, a form of organization that makes it impossible for the perpetrators to be easily found, let alone eradicated by mass reprisals. Indeed, the purpose of such extremists is frequently to tempt their victims or their governments into mass reprisals that help to breed a new generation of terrorists willing to take the lives of innocents and to threaten further the possibility of national and international efforts to improve well-being.

The ever-faster and more widespread distribution of images has the potential for destroying, as much as for building, shared understandings and agreed responses. For example, a single image of young Palestinians cheering news of the terrorist attacks may have as much potential for damage as another fuel-laden plane. On one side of a potential religious and political cleavage, some people treated the image as evidence that the terrorists were simply the visible part of a widespread intent to wage war on the United States, providing an incentive and need for massive military retaliation. On the other side of that looming divide, some people regarded the widespread distribution of the same image as evidence of US intent to demonize large parts of the Arab world.

How do these reactions relate to the recent research results? The well-being and social capital research shows the strong local and national basis of many linkages of social trust and understanding. Where global norms and networks are thin and local ones are strong, there are great risks that terrorist acts by individuals from elsewhere will be blamed on the communities and nations of their origin or affiliation. Atrocities put extreme pressures on the fragile fabric of internationally shared norms; yet it is precisely in the wake of such atrocities when shared norms, and the ability to design responses that will reduce, rather than raise, the risks of future atrocities, are most crucial. Moreover, atrocities place great

internal pressures on diverse societies, such as that of Canada, where external cleavages are most likely to have internal echoes. Yet such societies are the ones best placed to help avoid international cleavages based on nationality, race, and religion, since repeated friendly contacts in schools, jobs, and communities contribute to shared networks and norms that can help to avoid the escalation and extension of conflict terrorists so clearly desire.

Sensible Canadian Policies

Finally, dealing with the threats and with generalized fear and uncertainty requires hard reasoning and careful choices in the search for sensible policies. Some immediate policy responses seemed sensible at the time but were actually expensive and unproductive. One such response to September 11 was the tightening of border controls and consequent creation of long queues of south-bound goods shipments. Given the risks of border crossing either before or after the attacks, the likelihood of finding terrorist evidence or clues in any queued truck was almost surely less than in any randomly chosen truck travelling on a domestic US highway. The often-heard proposal to "buy" an open border by creating a common external perimeter lacks logic right at its core. Getting the trucks moving would cut the "collateral damage" of terrorism with no material increase in risk — there are far more appropriate targets for attention. The planned increases in US border staffing are welcome. Before September 11 Canadian border officials outnumbered their US counterparts by about 50 percent, making waits even then longer for southbound traffic.

Any common external perimeter must refer to arrivals by sea and by air. Improving security for inbound freight is primarily a national issue with features that differ from one seaport to the next. For air passengers arriving in North America, surely the required cooperation is not with the United States but with the countries and airports of embarkation. Indeed, long before September 11, Canada's officers posted overseas for this purpose had already showed their value by stopping thousands of illegal and criminal migrants from boarding planes bound for this country. With air terror as a key

risk, keeping planes clean by applying higher-level clearances before boarding international flights must have the highest priority. It neither requires nor implies a common North American perimeter. It provides one more example of an issue in which Canada has most to gain by adopting a broadly international strategy, rather than a primarily North American focus, for dealing with terror. The same is true for Canada's dealing with a much broader range of economic and social issues (Helliwell 2002a).

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Monetary Policy Anchors

Charles Freedman

It has long been recognized that maintaining low inflation or price stability is the best contribution that monetary policy can make to the achievement of a well-functioning economy, one in which living standards trend upward and the path of output growth is relatively stable. Consequently, central banks have always been in the forefront of those promoting low inflation or price stability as the primary goal of monetary policy.

What, then, explains the onset of inflation in the mid-1960s and its persistence at a high level in many countries through the 1970s? I believe that this "Great Inflation" resulted from the interaction of economic shocks and policy errors (Freedman, forthcoming). The shocks included, among others, the increase in aggregate demand related to the Vietnam War in the latter part of the 1960s, shifts in the natural rate of unemployment and the growth rate of capacity output in the first half of the 1970s in many countries, and sharply increasing energy prices. The policy errors that led to the accommodation of the shock-induced inflation pressures resulted from an incorrect framework of analysis: most notably insufficient attention to inflation expectations, lack of recognition of the downward movement in the growth of potential output, and insufficient regard for the costs of inflation.

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The combination of an overly optimistic estimate of capacity, an underestimate of the costs of inflation, and insufficient attention to inflation expectations resulted in policymakers' not being cognizant that they were taking the serious risk of allowing the economy to overheat and of not acting vigorously enough to offset the inflationary pressures that were developing. And once inflation expectations became entrenched at a high level, getting the inflation rate down became much more difficult than would have been the case in an environment in which the public expected that inflation shocks would be temporary and rapidly reversed. In short, what might otherwise have been a transitory bout of inflationary pressures turned into an ongoing period of high and pervasive inflation.

With this history as background, one can ask how a central bank should go about achieving and maintaining a goal of low inflation or price stability. The typical answer to this question is, through adopting a nominal anchor or intermediate target. Over the years, central banks have used three principal kinds of nominal anchor as a way of focusing the conduct of policy and tying down the expectations of the public: targeting monetary aggregates, fixing the exchange rate, and using an inflation-targeting regime.

Monetary Aggregates as Targets

About 25 years ago, many industrialized countries had just entered a period of targeting monetary aggregates. They were trying to bring down the rate of inflation from the high level it had reached in the first half of the 1970s to the much lower level believed necessary for good economic performance. The policy was intended to gradually bring down the targeted rate of growth of some measure of money (narrow in some countries, broad in others) from a high starting point to a much lower level and thereby wring inflation out of the system. In Canada, the narrow monetary aggregate, M1, was the target of policy from 1975 to 1982.

Analysts differed in their views of the workings of the mechanism that would link the deceleration of money growth to a decline in price inflation. The more monetarist view focused on a direct causal link between money growth and the rate of inflation. In

contrast, the typical view in central banking circles was that the mechanism would operate through more traditional, structural relationships. Thus, an overly high rate of inflation (one higher than consistent with the targeted growth rate of money) would increase the growth rate of the demand for money above the target rate, leading the central bank to raise policy interest rates. The result would be a rise in short-term market rates and, to a lesser extent, in long-term rates, which, in turn, would slow the growth of aggregate demand relative to capacity and feed into lower inflation.

Essential to this sequence of events were two preconditions. The first was stability in the money demand relationship, to elicit the appropriate signal regarding the pace of growth of nominal aggregate demand and the needed change in interest rates. Second, the response of interest rates to the deviation between money and targeted money had to be such as to have the appropriate effects on demand and inflation. If the relationship of money demand to interest rates was too elastic, then an excessively high rate of expansion of aggregate demand would give rise to only small increases in interest rates (all that was needed to return money growth to its targeted rate), which might not be sufficient to slow the growth of aggregate demand quickly (or at all).

Monetary targeting worked less well in practice than in theory, and by the mid-1980s, just ten years later, most countries had abandoned monetary targets or significantly downgraded the role of the monetary aggregates. Indeed, the Bank of Canada formally withdrew the targets in 1982. The main reason for the diminished role of the aggregates was that the money demand relationship had proved unstable. Initially, analysts attributed this instability to the deregulation of financial institutions and markets then going on in many countries. But lack of stability appeared in some countries, such as Canada, that had deregulated much earlier. In those countries, the instability seemed to be related to innovations initiated by financial institutions in which they changed the characteristics of the various financial instruments and services that they offered to the public.[1] As experience in many countries has subsequently

1 Examples of such innovations in Canada included the introduction of daily interest chequing accounts in the early 1980s and the payment of interest on...

shown, these kinds of innovations have continued apace and have lessened the information content of the monetary aggregates so much that they cannot bear the weight of being a formal intermediate target for monetary policy. In some countries, nonetheless, monetary aggregates continue to play a role in the conduct of policy because they bring some information to the assessment of the current economic and inflation situation. Even in these countries, however, the aggragates are only one of a number of variables feeding into the outlook for the economy and inflation.

The Exchange Rate as an Anchor

For many countries, especially smaller ones, the nominal anchor 30 years ago was an exchange rate fixed to the currency of a larger neighbour or a major trading partner. Over the long run, if the country on the fixed rate did not make periodic changes in the value of the parity of its peg, it would achieve a rate of inflation close to that of the country to which its currency was pegged. Hence, one way of achieving low inflation was to peg to the currency of a country whose monetary authority had a history of maintaining a low rate of inflation.

As financial markets became more open and private capital flows expanded in size, however, the adjustable peg regime became increasingly difficult to manage. In many cases, the country on the peg went through a period in which its domestic inflation rate was higher than that of the country to which it was pegged, leading to an appreciation of its real exchange rate. In other cases, a real shock, such as a sharp decline in the world prices for a country's exports, caused its currency to become overvalued in real terms.

Note 1 - cont'd.

...business demand deposits following the phaseout of reserve requirements in the early 1990s. (See Freedman 1983 and Aubry and Nott 2000 for detailed accounts of financial innovations in Canada.) Some observers also argue that the high nominal interest rates associated with the high rates of inflation were an important contributing factor to the earlier bouts of financial innovation (see Courchene 1983).

Markets' recognition of an overvaluation tended to lead to capital outflows that were potentially well in excess of the reserves available to the authorities to defend the currency peg. Moreover, the use of higher interest rates to stem the capital outflows was often either inappropriate to the circumstances of the domestic economy (and hence not a credible policy option for more than a very short period) or insufficient from the perspective of investors to offset the potential capital losses of remaining invested in a currency that was likely to be subsequently devalued.

In response to these difficulties, countries have tended to move in one of two directions: on the one hand, to a hard fix in the form of a monetary union[2] or of the use of some other country's currency ("dollarization" or "euroization"), and, on the other hand, to a floating exchange rate regime.

Operating under a monetary union or dollarization resolves the question of how to achieve low inflation, provided that the central bank of the monetary union or the country whose currency is being used is itself able to conduct policy to deliver a low rate of inflation. But the central banks of countries entering into a monetary union find their role in monetary policy much reduced. They presumably have input into the monetary policy deliberations of the union's central bank and a voice in setting the policy rate of interest. And to carry out this role effectively, they must maintain a competent research and analysis unit. Moreover, they may well continue to have responsibilities in operational areas (such as the payments system) and in supervision. But I anticipate their increasingly looking like the US regional federal reserve banks.

Two additional implications of dollarization (but not monetary union) are that the dollarizing country loses seigniorage, and it has to develop alternative ways of carrying out the lender-of-last-resort function.

The other choice is to adopt a floating exchange rate. In recent years, an increasing number of countries have been forced or have

2 The most important example of a new monetary union in recent years is, of course, the euro area, in which the European Central Bank is charged with the conduct of monetary policy.

chosen to do so. Countries may prefer this course over a monetary union or dollarization for a number of reasons. They may be concerned that the large country or monetary union to which they would otherwise cede their monetary responsibility would conduct an overly inflationary monetary policy. Some countries, including Canada, have an economic structure that differs from that of the potential partner country, and monetary union or dollarization would leave them vulnerable to idiosyncratic shocks. For example, if a country that is an important producer of commodities fixes its currency to that of a country that is an importer of commodities, it loses the shock-absorber properties of the floating rate at times of shocks to commodity prices. Furthermore, countries with geographically diversified trading patterns may be concerned that linking to a currency of a single country could result in excessive swings in competitiveness *vis-à-vis* their other trading partners when those countries experience sharp movements in their bilateral exchange rates.[3]

Inflation-Targeting Regimes

Given a floating exchange rate regime and no stable monetary aggregates, what can serve as the nominal anchor for a central bank? Over the past decade, a number of countries have moved to an inflation-targeting regime. New Zealand was the first country to do so, and Canada was the second (in 1991).

What has been the industrialized countries' overall experience with inflation targets?

- In a fairly short time, those with targets moved from the relatively high-inflation group of countries to the low-inflation group.
- As these countries achieved their announced goals over time, financial markets adjusted their longer-term inflation expecta-

3 This situation was one factor (among many) in the difficulties Argentina faced in the period leading up to the collapse of its currency board. The peso was tightly linked to the US dollar through a currency board, while the currencies of countries with which Argentina had important trade links, such as Brazil and the euro area, depreciated significantly *vis-à-vis* the US dollar.

tions, building them into longer-term interest rates. The risk premiums that compensate investors for inflation uncertainty declined or vanished. Moreover, participants in product and labour markets adjusted their expectations of future rates of inflation downward as the inflation targets were achieved. At the same time, inflation expectations became partly linked to the target and less sensitive to movements away from it.

- Despite these adjustments, one cannot find improvements in the sacrifice ratio (the cost in forgone output of bringing down the rate of inflation) in the data of the countries with inflation targets.
- The targets have been extremely helpful in explaining central bank actions (and, sometimes, inactions) to the financial markets and the public.
- The forecast of inflation has effectively become the intermediate target of policy in countries with targets, and the framework for the analysis of new economic information has shifted to its effect on inflation one to two years into the future. In other words, the framework has become more forward looking. Moreover, by focusing on bringing the inflation rate back to the target over a one- to two-year horizon when that rate deviates from the target, the policy approach has resulted in relatively low variability of both output and inflation.
- Staff members at a number of central banks report that the introduction of explicit targets has significantly improved the quality of monetary policy discussions within their institution.[4]

With inflation targets' success in containing inflation in industrial countries, a number of emerging-market economies either have adopted or are considering adopting such targets as the centrepiece of their monetary policy framework. Included in this group are Brazil, Chile, Mexico, South Africa, South Korea, and Indonesia.

4 For an overview of the Canadian experience with inflation targeting, see Thiessen (1998/99) or Freedman (2001). For an overview of the international experience, see Bernanke et al. (1999).

Analytic Formalization

The best way to think of the inflation-targeting approach to the conduct of policy is to view the central bank as targeting the inflation forecast several quarters out. Thus, when pressures of demand on capacity are judged likely to lead in the future to upward pressure on inflation relative to its target, the central bank raises interest rates. And when the economy is weak, with demand below its productive capacity, resulting in downward pressure on future inflation relative to its target, the central bank counters this tendency by lowering interest rates, thereby supporting the economy.

A more formal but useful way of characterizing this approach is to think of the central bank as minimizing a quadratic loss function whose arguments are the deviation of inflation from its target and the deviation of output from capacity. By acting to return inflation to its target, but more gradually than is technically feasible, monetary policy both achieves the longer-run goal of hitting the inflation target and lessens the variability of output around capacity.[5]

The Exchange Rate

A key element of the inflation-targeting regime is the way in which the floating exchange rate fits into the framework. When the central bank raises or lowers interest rates in response to the potential effect on inflation of excess or insufficient demand in the economy, the exchange rate is likely to appreciate or depreciate in consequence. And this movement acts in concert with the interest rate movement to bring inflation back toward the target, via both its direct impact on prices and, more important, its indirect effect through aggregate demand

Given this framework, how should the central bank respond to exchange rate movements that have been induced by factors other

5 See Freedman (1996) for a discussion of a number of the technical issues related to the implementation of inflation targets that have been discussed in detail in the literature. See also Bank of Canada (2001) for the Bank of Canada's current treatment of some of these issues.

than interest rate changes? The answer is that the appropriate response depends on the cause of the movement and what it indicates about the future direction of aggregate demand and inflation. If the exchange rate movement appears to be in response to a shock associated with a strengthening or weakening of aggregate demand and hence future inflation (for example, a shock in the terms of trade), the central bank should not try to offset the equilibrating nature of the movement. If, however, the source of the exchange rate movement is a portfolio adjustment by investors that is not associated with a "real" shock, the central bank may use an interest rate movement to offset the aggregate demand effects of the exchange rate movement (see Freedman 1995 for further details).

Credibility

If the central bank is successful in achieving the initial inflation targets, it will gain credibility. And this credibility, in turn, allows it to take advantage of one of the major benefits of inflation targets: the way in which they anchor inflation expectations.[6] Increased credibility and well-anchored inflation expectations give the central bank increased room to manoeuvre following temporary shocks, including supply shocks, since the behaviour of the public and of markets continues for some time to be based on expectations that the central bank will maintain control over inflation. If, however, the central bank does not take action to counter more persistent pressures, credibility will suffer and the anchor will begin to disappear. Thus, the central bank must always be vigilant about the risks of sustained inflation pressures.

Future Developments

What is the prognosis for nominal anchors in the future? Unlike monetary aggregate targeting, which was always potentially vulnerable to the possibility of instability in the relationship between

6 See Perrier and Amano (2000) for an analysis of the link between inflation targets and credibility in the Canadian context.

money and inflation, neither the exchange rate nor the inflation target is subject to that kind of problem. Hence, they both have the capability to last longer than did the monetary aggregate targets as the intermediate target or anchor for controlling inflation.

I also believe that the 1990s' movement away from the classic adjustable-peg exchange rate regime will continue, and I predict that, over time, we will see more truly hard fixes, more inflation-targeting floaters, and fewer adjustable pegs. That is, because of the problems that are associated with an adjustable-peg regime, those countries that deem it appropriate to their circumstances to fix their exchange rate will move either to a monetary union or to the use of another country's currency, which will provide them with an anchor. In particular, countries with a history of high inflation and a political structure that is unable to support domestically based arrangements for achieving low inflation will tend to opt for a hard fix. Although a monetary union offers economic advantages over the adoption of another country's currency in the areas of seigniorage, lender of last resort, and participation in monetary policy deliberations, in the end a particular country's ability to participate in a monetary union is a political decision on the part of all the countries involved.[7] If the outcome is that a country is unable to join a monetary union and decides to use another country's currency, the choice between dollarization and euroization will depend on such matters as trade links, geography, factor mobility, and the correlation of the shocks hitting the country and those faced by the United States and the euro area.

Those countries for which these types of hard-fix arrangements are viewed as inappropriate for the reasons discussed earlier will maintain floating exchange rate regimes. And while a few countries will be able to rely on an implicit commitment to low inflation (as in the United States), I expect that the nominal anchor for most countries under a floating exchange rate regime will be an explicit commitment to a target rate of inflation.

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7 Thus, the view that Canada should join a North American monetary union presupposes a willingness on the part of the United States to enter into shared arrangements for conducting monetary policy.

Concluding Remarks

David Laidler (1999) emphasizes the importance of a country's having a coherent monetary order. By this he means a set of arrangements whereby (a) monetary policy has a well-defined goal; (b) the authorities charged with achieving that goal have the powers needed to achieve it; (c) private sector agents, or at least a representative majority of them, understand that goal, expect it to be pursued, and base their own actions on that expectation; and (d) the relevant policymaking authorities are accountable to the electorate both for their choice of policy goals and for their performance in pursuing them. In assessing different possible arrangements, one must keep in mind the role each of these elements plays and how the different parts of the set of arrangements mutually reinforce one another.

The year that I spent at the Department of Finance as Clifford Clark Visiting Economist, from fall 1989 through fall 1990, fell in the period between Canada's withdrawal of the monetary targets in 1982 and the introduction of the inflation-control targets in 1991. The year was an eventful one for monetary policy, with continuing pressure on inflation, high rates of interest, an appreciating rate of exchange, and, subsequently, a weakening of the economy and an increase in the rate of unemployment.

An episode during that year illustrates the difficulties that can arise when no explicit monetary anchor exists and the private sector does not completely understand the motivation for the monetary authority's actions. In early 1990, the Bank of Canada eased interest rates slightly in response to signs of moderating pressures that were expected to become more pronounced in the period ahead. The markets did not appear to understand that the Bank was acting in anticipation of future downward pressures on inflation. The result was a sharp depreciation of the dollar, which gave rise to concerns about a potential increase in inflation and, consequently, about a potential rise in inflation expectations. These concerns, in turn, led to subsequent upward movements in short-term interest rates.

In contrast, during the latter half of the 1990s, interest rate declines in Canada in response to a weakening of the economy did not lead to a rise in inflation expectations. With both monetary and

fiscal policy having increased credibility, with expectations anchored by the symmetric inflation target, and with greater transparency on the part of the monetary authority, savers and investors interpreted the interest rate easing as the appropriate response to the weakening economy and to the increased likelihood of downward pressure on the future rate of inflation. The anchor provided by the inflation target and market participants' greater understanding of the Bank's policy framework contributed importantly to the ability of monetary policy to help to offset the effect on the economy of demand shocks, while maintaining the rate of inflation near its target.

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On Fiscal Balance in the Canadian Federation

Kenneth Norrie

I began my term as Clifford Clark Visiting Economist in summer 1990, one month after the collapse of the Meech Lake Accord.[1] Accordingly, I spent much of my time in the position thinking about issues of federalism and the Canadian economic union. Perhaps not surprisingly, therefore, I have chosen fiscal balance as my topic for this volume.

Several years ago, the provincial and territorial ministers of finance drew attention to what they termed a fundamental vertical fiscal imbalance (VFI) in Canadian federalism. Defining VFI as a situation in which "the distribution of revenue sources between orders of government...is out of line with the distribution of spending responsibilities" (1998, 13), they argued that this imbalance had existed throughout the postwar period and had became particularly acute in the years of federal fiscal restraint in the 1990s. Further, they predicted, it would grow worse as future growth in provincial/territorial expenditure responsibilities was certain to outstrip the growth in revenue, while the opposite situation was true for the federal government.

The western and territorial finance ministers continued this theme in two subsequent annual presentations to the premiers (2000; 2001). The communiqués concluded that the need for fiscal rebalancing was pressing. Expenditure responsibilities for the major

1 I wish to acknowledge the support and encouragement I received from the Department of Finance during this time. One could not wish for a richer experience as a policy economist.

areas of health, education, and social assistance are assigned to the provinces, properly in their view, so the only recourse is to transfer some revenue capacity to them.

That transfer could take any of three forms: increased cash transfers, equalized tax-point reallocations, or tax field realignment. The 1998 report briefly discussed the pros and cons of each option but made no recommendations on a preferred option. Since then, discussion has mostly focused on cash versus tax-point transfers.

Perhaps predictably, the federal government has disputed the notion of a VFI, and hence the need for greater revenue transfers to the provinces and territories. Minister of Intergovernmental Affairs Stéphane Dion boasted that the federal government had done a "spectacular" job of putting its financial house in order since 1993. But, he cautioned,

> Contrary to what some people may believe, the federal government will not be awash in surpluses in the coming years. Just like the provinces, in the coming years it will need to carefully manage the margin of safety that has been acquired through so many sacrifices made by Canadians. (April 10, 2001.)

Quebec's Commission on Fiscal Imbalance recently issued its final report after nearly a year of study and public consultation. Yves Séguin, the president of the commission, gave his interpretation of the fiscal imbalance issue in a press release (March 7, 2002).

> The situation can be summed up fairly easily: the federal government occupies too much tax room compared to its responsibilities.... At the same time, the provinces do not have sufficient resources to fund their expenditures in their fields of jurisdiction. (Quebec 2002.)

Once again, Stéphane Dion was quick to respond. No equivocation from this quarter: the press release for his annual speech (2002) to the St-Laurent Chamber of Commerce was headlined "Minister Dion Demonstrates that Fiscal Imbalance Is a Myth" (March 27).

This policy debate is clearly important. The obvious question is, who is correct? The above accounts may suggest that a definite answer and hence an unequivocal clear policy response exist, and

that the only question is who has the stronger empirical evidence. Such certitude is not the case, however, as I demonstrate in what follows. I argue instead that fiscal balance is not a fundamental characteristic of Canada's intergovernmental fiscal structure; rather, it is a political choice. Accepting this view helps to explain why serious analysts and politicians can draw such dissimilar conclusions from the same data set. Unfortunately, accepting it also means the debate has no objective resolution.

On Recognizing an Elk

Arguing that empirical demonstrations of fiscal imbalances are not what they seem is akin to trying to convince a group of Banff tourists that the animal they see in front of them is not an elk. The logical way to proceed is first to demonstrate what an elk actually looks like and then to show that the beast in question, appearances notwithstanding, is not an elk but rather something quite different, albeit equally interesting.

The notion of a fundamental imbalance in the distributions of revenue sources and expenditure responsibilities draws on the traditional interpretation of VFI. Every federal system, in drawing up its constitution, must assign expenditure responsibilities and tax powers across levels of government. The question is how these responsibilities are best lodged.

Economists, naturally enough, look for guidance to the twin criteria of equity and efficiency. Not surprisingly, the accepted view is that these grounds are unlikely to provide a perfect match of revenues and expenditures. Almost certainly, some governments will find themselves with significant expenditure obligations yet be excluded constitutionally from exploiting one or more of the major tax sources. Conversely, other orders of government will be able to raise revenue in excess of their allotted expenditure obligations.

If taxes and expenditures do not match perfectly, a vertical fiscal gap exists and intergovernmental fiscal transfers are called for. The jurisdiction with the surplus fiscal capacity taxes in excess of its expenditure obligations and makes transfers to the jurisdictions that face formal constraints on their revenue-raising ability. Transfers to redress VFI should be unconditional. In effect, the jurisdic-

tion with the superior revenue-raising ability is acting as tax collector for the other jurisdictions. That way, taxation is carried out with the least distortion to the economy while expenditures most closely reflect the geographical distribution of preferences for public goods.

This description of VFI and the way to fix it describes perfectly the fiscal arrangements introduced with the *Constitution Act, 1867*. Customs and excise duties were by far the major source of government revenue in the mid-nineteenth century. Provinces were prohibited constitutionally from levying them, so as not to interfere with efforts to promote interprovincial trade. But because most economic and social life was local rather than national, provinces had significant expenditure responsibilities. No clearer example of a classic vertical fiscal gap can be imagined. In response, Ottawa provided statutory subsidies to the original four Confederation partners and to new ones as they entered the union. These unconditional subsidies were adjusted upward early in the twentieth century as provincial program expenditure responsibilities grew in consequence of urbanization and industrialization.

This historical example is, however, just an historical example. Governments in Canada, as elsewhere, moved quickly after 1867 to define and occupy new taxation fields. With minor exceptions, both levels of government have had full access to all major revenue sources for more than a century.[2] Thus, VFI in its classic form — provinces with significant expenditure responsibilities but constitutionally shut out of one or more major tax revenue sources — is no longer with us.[3]

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2 An exception to this statement is the fiscal arrangements adopted during World War II. Until that time, provincial governments had been financing the bulk of their expenditures from their own taxation efforts. Faced with financing full-scale mobilization, the federal government took over exclusive authority for the three main tax sources — personal and corporate income taxes and succession duties — in return for making annual "rental" payments to the provinces. In effect, provinces turned over a significant portion of their revenue capacity to Ottawa to finance the nation's war effort.

3 Indeed, given that the provinces and territories have exclusive access to the relatively lucrative lotteries and resource royalties, one might use this classic view to argue that the vertical imbalance in Canada is in the other direction.

But It's Large and Brown

The provincial/territorial communiqués present an empirical account of VFI. They take the current taxation structure (tax assignments, bases, and rates) as given, and then project revenue from each tax source, using a simple model that relates growth in tax revenue to growth in independent variables such as gross domestic product (GDP) or the consumer price index (CPI). The greater the projected growth in the relevant independent variables and the higher the tax revenue elasticity, the greater the anticipated growth in tax receipts. Thus, a jurisdiction with a large share of its total tax receipts coming from a rapidly growing tax source will experience robust revenue growth. The converse will be true for a jurisdiction with a large share of its total tax receipts coming from a slowly growing tax source.

In a fiscal balance sense, these calculations generally favour the federal government since it depends relatively more for its total revenue on the fastest-growing tax source, personal income. The difference in revenue projections is not large, however, as the two jurisdictions share access to the main revenue sources and the provinces/territories have exclusive or near exclusive access to some tax sources, such as lotteries and resource royalties.

The calculations also take the structure of program expenditures as given and then project them for each program, using a simple model that relates growth in outlays to growth in independent variables such as population, CPI, or an ageing factor. Thus, a jurisdiction with a large share of its program expenditures in a rapidly growing expenditure area will show up as facing rapidly growing program expenditures. Again, the converse will be true for a jurisdiction with a large share of its program expenditures in a slowly growing expenditure.

These calculations show the provinces/territories suffering in a fiscal balance sense. They have a large share of their program spending in rapidly growing expenditure areas — health care, education, and social assistance — while the only rapidly growing federal program expenditure is old age security (OAS). The difference in projections of expenditure is quite large, unlike the case for revenue. Ruggeri (2000) initially projected that provincial/territorial

expenditures would grow, on average, by 3.2 percent per annum between fiscal years 1998/99 and 2019/20, compared with 2.1 percent for the federal government during the same period. He later revised these numbers slightly — to 3.5 percent and 2.2 percent, respectively — in light of changing economic circumstances, adjustments to federal transfer payments, and new tax and spending initiatives by both orders of government (Ruggeri 2001).

Putting the two sets of calculations together yields projections of large and growing surpluses for the federal government. Ruggeri (2000) initially projected a federal budgetary surplus of $5.3 billion in fiscal year 1998/99, growing to $153.7 billion by 2019/20. The provinces and territories, by comparison, would move from a combined deficit of $8.3 billion in 1998/99 to a surplus of $13.9 billion by 2019/20. The revised projections (Ruggeri 2001) show a federal surplus of $4.9 billion in 1999/2000, growing to $126.2 billion in 2019/20, and for the provinces and territories, a combined deficit of $1.2 billion in 1999/2000, changing to a surplus of $5.5 billion in 2019/20.

The Séguin Commission also used relative fiscal performances, projected by the Conference Board of Canada, to argue for the existence of a VFI. Assuming maintenance of the current revenue and program structure, the board calculated that Quebec would post recurring deficits, averaging $3 billion per year, until fiscal year 2019/20, while the federal government would achieve ever-greater surpluses, totalling nearly $90 billion by the end of the same period (Quebec 2002b).

This type of calculation presents two problems, however. The first is that the projections are highly susceptible to changes in the economic environment. Federal government revenues vary significantly with changes in economic growth and in tax rates. Spending can shift unexpectedly. Witness the way projected federal surpluses quickly looked outdated after September 11, 2001, in the face of new pressures for outlays on defence, security, and airline compensation. More recently, the situation has changed again as higher-than-expected economic growth rates have buoyed federal revenues.

The other problem is that the projections portray a static and mechanical view of public sector behaviour. Specifically, they assume no changes in tax or spending policies even as budgetary

surpluses or deficits pile up. But Canadian governments can and do adjust taxes and program spending over time as circumstances change. Think of the politically painful but ultimately successful efforts by both orders of governments in the 1990s to overcome large and burgeoning deficits. The argument is symmetrical: Ottawa's and (until recently) Alberta's spending and taxation responses to growing surpluses provide examples of the same point in the other direction.

Also, the provinces vary considerably in the way they exploit the tax room available to them. In 1961, the province with the lowest own-source revenue as a percentage of GDP had 4.9 percent while the highest had 8.5 percent, implying a spread of 3.6 percentage points. By the late 1970s, the spread had risen to 10 percentage points, and it has remained roughly constant since. For all provinces, the coefficient of variation of own-source revenue as a percentage of GDP fell notably in the 1960s, rose even more dramatically in the 1970s, and has fluctuated around a near-constant trend since (Norrie and Wilson 2000, fig. 2 and 3). These numbers seem to indicate that individual provinces can and do vary tax efforts in order to achieve their economic and social objectives. It is not easy to reconcile this variation with the mechanical view of government behaviour that underlies the provincial/territorial calculations.

What Is It, If It's Not An Elk?

In 1945, with the wartime emergency over, public sector spending priorities turned to social programs. Although they were in areas of provincial jurisdiction, the federal government was an active player. Medicare was introduced after much study and debate, with Ottawa contributing approximately 50 percent of provincial spending via matching grants. For social assistance, Ottawa matched provincial expenditures through shared-cost programs that were eventually rolled into the Canada Assistance Plan (CAP). The same principle was in place for postsecondary education, although the mechanism was slightly different. Ottawa's initial contribution came via a tax point transfer, whereby federal personal and corporate income tax rates were lowered to make room for the provinces.

The remainder of the transfer — equal to the difference between 50 percent of the operating costs and the estimated value to the provinces of the tax point transfer — came as cash.

This period was certainly not without controversy and vigorous debate. Nonetheless, as John Richards notes, "The result was the creation of a Canadian welfare state comparable in generosity to the average prevailing among the industrialized countries" (2002, 1). Further, there was a reasonably well-defined understanding of respective roles and responsibilities. The provinces paid half the bill and got to design and manage the programs. The federal government paid the other half in return for adherence to broad national standards in program design and delivery.[4] In other words, policy expectations and fiscal obligations were in qualitative balance.

The problem was that this relatively satisfactory state of affairs began to crumble almost immediately. The federal government soon came to rue its open-ended financial commitments. The 1972 *Fiscal Arrangements Act* capped the annual increase in grants for postsecondary education. In 1975, in the face of rapidly rising costs over which Ottawa felt it had no control, it announced a ceiling on health care expenditures.

In 1977, the *Federal-Provincial Fiscal Arrangements and Established Programs Financing Act* made an important change to the system of fiscal transfers. The legislation altered the way the federal contribution to hospital insurance, medical care, and postsecondary education was made. Henceforth, the grant was to be paid in two parts. One was an annual cash payment to each province, escalated each year by the rise in per capita GDP averaged over the preceding three years. The other part of the federal contribution resulted from a transfer of personal and corporate income tax points to the provinces.

An important implication of the 1977 arrangements was that the annual federal contribution to Established Programs Financing (EPF) no longer depended in any way on the expenditures the provinces actually made. The value of the cash transfers' increase

4 At least in health care and social assistance polices; the statement is less obviously true for postsecondary education.

each year was the rise in GDP. The value of the taxes transferred rose according to the value of the tax base. Neither escalator had formal connection to actual spending on health and postsecondary education.

This system was altered in 1982 to make cash transfers a residual payment equal to the difference between the province's total entitlement and the estimated value of the tax transfer.

As the federal budget situation worsened throughout the 1980s, EPF arrangements were altered on an *ad hoc* basis. Payments deemed to be owing to postsecondary education were limited to 6 percent growth in fiscal year 1983/84 and 5 percent growth in 1984/85. In 1986, Ottawa lowered the escalator on the basic entitlement to 2 percentage points below the growth rate of GDP for 1986/87 and subsequent years. In the 1989 budget, the escalator was reduced by another percentage point, effective for 1990/1991. In the 1990 budget, the basic EPF entitlement was frozen for two years at the 1989/1990 per capita value. The next year the freeze was extended to 1994/95.

The Canada Assistance Plan came in for a slightly different fate under budget austerity. In its 1990 budget, Ottawa announced a ceiling of 5 percent growth on the total amount it would transfer under CAP in the next two fiscal years to those provinces not receiving equalization — British Columbia, Alberta, and Ontario. This limit was extended to 1994/95 in the 1991 budget.

In the 1995 budget, EPF and CAP gave way to the Canada Health and Social Transfer (CHST), a block-funding arrangement wherein the federal government pledged to remit $11 billion in cash to the provinces beginning in 1996. Discussions immediately ensued regarding the total amount of the transfer and the formula by which it was distributed among the recipients. The overall amount has been adjusted several times since the initial $11 billion, generally on an *ad hoc* basis on the occasion of federal government budgets. Ottawa continues to include the estimated value of the 1977 tax point transfers as part of its CHST payments. The provinces and territories, along with most independent observers,[5] consider

5 Including this observer.

only the cash portion. The allocation formula has been adjusted to move it toward an equal per capita grant.

This brief history makes clear that the implicit social policy pact that underlay the introduction of the Canadian welfare state in the two decades after World War II began to crumble almost as soon as it was in place. Ottawa quickly abandoned any attempt to match its social policy transfers to actual program expenditures. Cash transfers to the provinces today make up only a small portion of total provincial spending on health, education, and social assistance. Yet Ottawa has provided no commensurate relaxation of its expectations of the programs, health care in particular.

The federation is thus in imbalance. But it is not usefully captured by mechanical projections of federal and provincial government budgetary balances. Rather, the imbalance is in the altered terms of the pact that underlay the establishment of Canada's welfare state; the relative fiscal obligations have changed much more significantly than the respective policy expectations.

OK, But It's Still Eating Our Box Lunch

In sum, the provinces and territories have raised an important policy issue for Canadians to consider, but they have miscast it. They make no compelling case that a fundamental fiscal imbalance exists in Canadian fiscal federalism. The traditional interpretation of a VFI does not apply to a federation in which both orders of government have equal access to the main revenue sources and both clearly exercise these powers to achieve economic and social objectives. There is, in other words, no apparent support for the view that actual and projected federal and provincial budget balances under unchanged taxation and expenditure structures tell us anything meaningful about fiscal balance in the Canadian federation.

The issue would be better cast as a debate about the relative roles and responsibilities for Canada's social programs, specifically health care. Policy expectations and fiscal contributions were once balanced in the federal-provincial pact that underlay the formation of the Canadian social welfare state. This balance, however, began to unravel almost immediately. The federal government

now pays a small and declining share of the expenditures on health care, and this contribution has long since been uncoupled from actual spending. If Ottawa is to continue to play a policy role in the interests of maintaining national standards, the question becomes, at what price? How many of their health care dollars do Canadians wish to see tied to this policy objective?

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Putting Canada in the Vanguard of the Internet Transformation

Peter J. Nicholson

In August 1995 at the conclusion of my term as Clifford Clark Visiting Economist, I left behind at the Department of Finance an essay outlining some proposals as to Canada's policy priorities for the next decade. Included was the following statement:

> Perhaps the most compelling phenomenon of our times is the emergence of the *information society* — based on microchips and communications — but far transcending those technological underpinnings. Shaping Canada's role in the information society according to our values, and assuring that we stay at the leading edge, are opportunities of sufficient breadth and potential to define a great national project. (Nicholson 1995, 17; italics in original.)

Much has happened in the intervening years. In 1995, it was still possible to write about the information society yet not associate that idea with the Internet. Netscape, the developer of the first web browser, was just a software startup in the process of going public. Few people knew what an Internet service provider was. E-mail was an academic curiosity. Words such as *e-commerce* did not exist.

By 2001, we had gone through the dot-com bubble and its spectacular deflation. Nevertheless, the Internet-user population, which had soared to 300 million worldwide, is still projected to reach roughly a billion users by 2005. More than a trillion dollars of commerce will likely be conducted via the Internet this year.

Some commentators nevertheless believe that the collapse of Internet stocks — indeed, the entire implosion of investment in the telecom sector — marked the end of the Internet era. As I argue below, this event marked only the end of the beginning. In fact, the

dot-com euphoria and subsequent meltdown were predictable (except for the precise timing), a consequence of the rapid expansion of a revolutionary new technology. History is replete with analogous experience.

The drivers of the continuing Internet transformation are ultimately technological, reinforced by demographic and behavioural shifts. These drivers continue to wax, not wane. Combined with the decentralized, innovation-friendly nature of the Internet, they will foment changes in business, government, and society we can scarcely begin to imagine.

The Internet's Fundamental Characteristics

The Internet should be thought of as a new *medium* with a transformative potential based on three fundamental characteristics:

- The Internet harnesses the exponentially growing power of communications and computing technologies *combined*.
- The Internet is based on open, global standards and is therefore a *universal* medium.
- The Internet is *protean* — that is, it adapts to an open-ended variety of purposes, much like human intelligence itself.

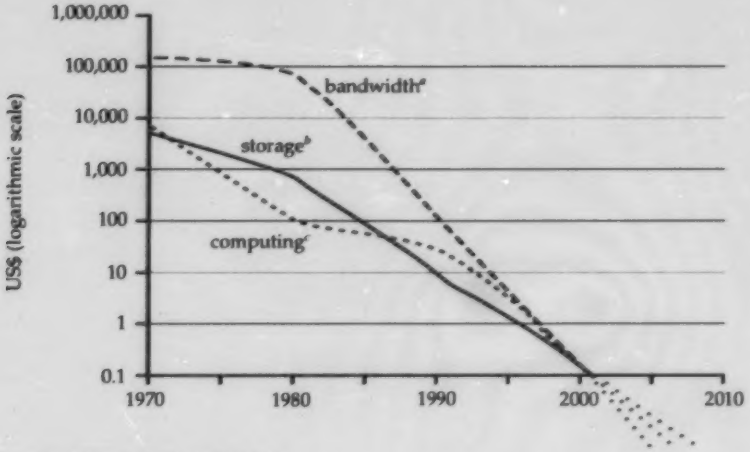
Each of these properties is remarkable and deserves a bit more consideration.

Technology

The transformative potential of the fundamental technologies underlying the Internet — computing, optical communications, and electronic storage — cannot be over-stated (see Figure 1). For more than 30 years, microchip technology has yielded a doubling of the ratio of computing performance relative to cost roughly every 18 months (Moore's Law).[1] Today's Pentium IV processor

1 Early in the computer revolution, Intel co-founder Gordon Moore predicted that computing capability (proxied by the number of transistors that can be put on a single semiconductor chip) would double every two years. It has actually doubled about every 18 months. (See *Microsoft Computer Dictionary*, 4th ed.)

Figure 1: *Internet Cost Factors*



a Cost of sending 1 trillion bits.
b Cost of 1 megabyte storage.
c Cost of 1 MHz processor speed.

Source: Federal Reserve Bank of Dallas.

has 42 million transistors, and Intel confidently forecasts that by 2007 this number will rise 24-fold to a billion. Although that number is still well short of the roughly 100 billion neurons in the human brain, the next generation of chips will nevertheless be capable of remarkable feats of quasi-intelligence in view of the blinding logic speed of semiconductor devices.

No other technology has ever come close to the sustained productivity improvement of the microprocessor. A doubling of the performance-to-cost ratio every 18 months implies a thousandfold productivity improvement in just 15 years. Indeed, if Moore's Law applied to the auto industry, today's five-year old could expect to buy a BMW for pocket change by the time she graduated from university.

Meanwhile, the performance-to-price ratio of electronic storage systems, such as hard drives, is improving even faster than Moore's Law, doubling roughly every 12 months. The bandwidth of optical fibre is increasing faster still. In 1970, it cost $150,000 to transmit a

trillion bits of data (one terabit). By 2000, the cost of sending the same quantity of data — roughly equivalent to 100 million pages of text — had declined to about 15 to 20 cents. Today's leading-edge technology, employing digital encoding of information on multiple "colours" of light, could send that terabit of information in less than one second across a single strand of fibre, the width of a human hair.

These technologies have inconceivable potential to change what is possible. Table 1 suggests some near-term implications.

Looking forward, we can see that the economic consequences of the Internet transformation will flow primarily from the fact that the cost of globally networked information is likely to decline by a thousandfold over the next 15 to 20 years. This decrease could put access to virtually all the codified information on the planet potentially within the grasp and affordability of a large fraction of humanity. Making productive use of that information and ensuring its broad accessibility in fact are, of course, huge challenges of a different kind.

Open Standards

The public Internet is really a vast number of networks that communicate via a common set of standards, of which the Internet Protocol (IP) is the most prominent. These standard protocols — the data encoding and transmission conventions that allow computers to "talk" to one another — have had the revolutionary effect of allowing *independently* managed communications networks to interoperate worldwide. Thus, although Internet traffic is carried on thousands of physical networks (many of which are owned by phone companies and built originally to carry voice), no one actually *owns* the Internet. Fundamentally, the Internet represents a communications Esperanto whose standards are developed and maintained by a global network of volunteer groups of technical experts.

The Protean Internet

The design of the Internet does not presuppose how it will be used. Essentially, all it does is carry raw digital information (bits) from

Table 1: ***Technology Trends and Projections***

Trends	Current Standard	Projections	Some Implications
	Computing *(performance still doubling every 18 to 24 months — Moore's Law)*		
Moore's Law will continue for at least another 8 to 10 years based on recent announcements by IBM and Intel. Thereafter, "nano-scale" (molecular level) devices are likely to be used.	• Pentium IV becoming standard. • Speed of 1.8 GHz with 4.2 million transistors per chip. • Fierce price competition between Intel and AMD.	• 1 billion transistors per chip with a speed of 20 GHz by 2007 (i.e., 12 times faster than today with 24 times the density).	• Dramatic performance and cost reduction, particularly in non-PC devices (e.g., cell phones, PDA). • High-quality voice recognition. • "Reasonable" language translation for text on the Internet (e.g., website in language X automatically rendered in language Y. • Significantly more "intelligent" devices and netwoks.
	Communications *(Performance doubling every 6 to 12 months)*		
Moving toward all-optical networks with "photonic switching," meaning no conversion between optical and electronic domains except at end-user devices. Dramatic increases in the number of wavelengths per fibre and number of bits carried per wavelength.	• 10 gigabits per second in extensive deployment. • Systems are available at 10 gigabits per second per wavelength and 160 wavelengths per fibre (total: 1.6 terabits per second per fibre), theoretically enough to carry 100 million calls at once on one fibre.	• 40 gigabits per second with 1,000+ wavelengths by 2005. • More than 40 terabits per second per fibre — 25 times the current maximum.	• Cost of "wasting bandwidth" becomes insignificant, leading to a fundamental rethink of network design and performance. • The true multimedia Internet arrives. • Large customers get their "own" wavelengths. • But rapid performance leap-frogging creates high uncertainty and reluctance to invest pending the next generation.

	Storage *(performance doubling every 12 months)*		
Acceleration of rate of improvement in storage density and cost with no let-up in sight. Optical and atomic-level storage could extend the trend almost indefinitely.	• Current mass storage devices achieve 25 gigabytes per square inch compared with 6 in 1999. • Cost per gigabyte in hard drives now about $6 compared with $37 in 1999. (Storing a movie requires about 5 gigabytes.)	• Capacity will be 100 gigabytes per square inch and cost $1 per gigabyte by 2003. (20 DVD-quality movies will be able to be stored on one tiny disc.)	• Personal video recorders and like devices will have almost unlimited storage at nominal cost. When combined with communications bandwidth, this trend will revolutionize distribution (and the revenue model) for media. • "Electronic paper" will become functionally and economically attractive (e-books, e-newspapers). • Mobile devices will have huge data functionality.
	Software *(no Moore's Law here)*		
Software development focuses on building components that connect through standardized interfaces. XML and related standards allow interoperable web services to expand capabilities of the Internet beyond the "web."	• Most current applications are written for Windows or the web — either limited to a single machine or constrained by the limits of HTML (the language used to describe web pages).	• XML-based web services will spark a new round of innovation in enterprise and e-business applications.	• Software will interact seamlessly across multiple computers and networks. • Innovative peer-to-peer applications will exploit the power of edge devices. • New services will develop that combine information and functionality from multiple providers.

Sources: Various industry reports; estimates from BCE Inc.

point A to point B. The meaning of those bits, how they are processed, and what they are ultimately used for is determined by the devices and users at the edge of the network.

This freedom has permitted the key applications we now associate with the Internet to be developed independently of the physical network itself. First, e-mail appeared during the 1970s (mostly for scientific communication), followed by a variety of additional text-based message and information applications during the 1980s. The invention in the early 1990s of the World Wide Web — a software innovation — triggered mass mainstream adoption and a torrent of new applications and services. I expect that the applications of the Internet will continue to branch and mutate indefinitely. In effect, the Internet is becoming a global cyber nervous system.

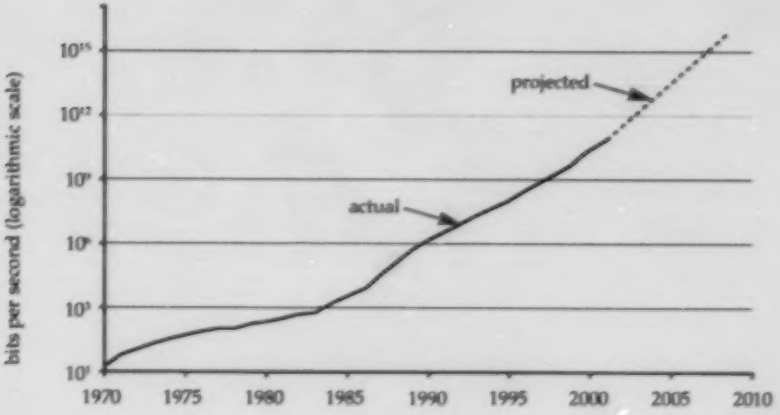
Boom and Bust — and the Future

In March 2000, the stock market delivered a deeply negative judgment of the Internet's future economic significance. The market's skepticism, which persists, reflects the dearth of Internet-based business models, without which the technological potential can never become reified in productive capital. But we should not be too impatient. The Internet, as a commercial phenomenon, is barely six years old, and already it has embedded itself in the daily routine of hundreds of millions of individuals and businesses. The volume of Internet traffic continues to double every 12 months, despite the dot-com eclipse (see Figure 2).

Economic history suggests that the introduction of a transformative technology often triggers a cycle of inflated expectations, hyperinvestment, a riot of innovation and competition, and ultimately a Darwinian (more accurately, a Schumpeterian) shakeout into a relatively small number of viable entities.

The railway expansion in the second half of the nineteenth century and the automobile boom that followed are instructive examples. The turn of the twentieth century saw a handful of US automobile manufacturers, the majority of which were building cars powered by steam or electricity. During the next decade, the number of manufacturers boomed, peaking at close to 300 in 1911.

Figure 2: *The Growth of Internet Traffic in the United States*



Source: Roberts 2001.

The collapse of unsustainable competitors and the consolidation of the industry began well before Henry Ford developed the moving assembly line that ushered in a radical alteration of US manufacturing. By the mid-1920s, most of the industry was concentrated in the "Big Three" companies. Yet the most profound impacts of the automobile — the creation of suburbia, the empowerment of the mobile individual, and the darker consequences of pollution and highway carnage — were still decades away.

Attempting to understand the long-term impact of the Internet from the perspective of 2002 would be like trying to have predicted in 1911 how the automobile would affect society. At present, we should think of the Internet as the "wheel" of the global information society. We now have a rudimentary wheel. The "car" is yet to be invented.

Impact on Productivity

We can, nevertheless, make some broad economic generalizations that demonstrate the Internet's transformational significance. The role of the information and communications technology (ICT) sec-

tor in the growth of the past decade has been well documented. And although most of the recent impact on measured productivity has come via the electronic and communications equipment sector, the services that these technologies enable will eventually drive a much more significant transformation. The fact that the broader impact will occur with a relatively long lag is due to the inertial effect of installed capital, the ingrained habits of individuals and organizations, and simply the time it takes for society to climb a new learning curve. (David and Wright [1999] extensively document this generic process, in the context of the slow diffusion of electric power.)

What we can now predict with reasonable assurance is that the sheer magnitude of productivity growth in the infrastructure technologies of the Internet will exert a *growing* impact on total factor productivity in the economy overall. The size of the direct contribution of these technologies to productivity growth depends on their share in national expenditure multiplied by the rate at which the cost of their output is falling. We can expect the share of ICT and related services in national expenditure to continue to grow since the demand for that output is extremely elastic with respect to both price and income. The reason is twofold. First, the Internet (understood here as a broad proxy for the ICT sector) is an exceptionally versatile enabling technology and thus, as related costs and prices fall, large new areas of application are opened up. Second, as incomes rise, the demand for luxury goods — which the Internet and related ICT gadgetry still are for many people — increases more than proportionally. Thus, the overall share of ICT output in national expenditure will increase while, as described earlier, the cost of that output falls rapidly. And as the Internet infrastructure proliferates, through, for example, broadband access, new terminal devices, and more functional and reliable software, the resulting network externalities will accelerate the social value of the medium.[2]

2 The value of any network is roughly proportional to the number of interconnections and these grow approximately as the square of the number of connected users. Networks that connect relatively few users are of limited social and economic significance. But when whole populations become interconnected, the utility is greatly multiplied.

The macroeconomic impact of the Internet will likely be felt primarily through two channels: (a) via its impact on the rate of productivity growth, which increases the per capita growth potential of the economy and thus the average material standard of living; and (b) by cutting the size of buffer stocks (inventories, and so on) throughout the economy as networked information technology reduces the uncertainty against which such hedges are kept. This decrease in buffers would cut the deadweight cost of unused capital (a microeconomic effect) and should also mute the amplitude of the inventory component of the business cycle (a macroeconomic effect).[3]

Effects through Firms and Individuals

Analysts expect that by far the greatest economic impact of the Internet transformation will come from its effect on the behaviour of businesses and individuals. The international economics group of Goldman Sachs has made one of the few credible attempts to quantify the impact arising from the systematic diffusion of e-commerce throughout the business sector of the Group-of-Seven (G-7) countries. That analysis (Brookes and Wahhaj 2000) concludes that the trend rate of GDP growth will eventually be boosted by about 0.5 percent per annum. Work commissioned by the Brookings Institution (Litan and Rivlin 2001) concludes that the Internet will increase productivity growth by a quarter to a half percentage point per year over the next five years. Longer term, these estimates are likely conservative since they are based on extrapolation of the efficiency potential, sector by sector, that can be roughly estimated now. Eventually, the prospect of a several *hundredfold* decline in the cost of globally networked information should open new channels of innovation that cannot be projected today.

To cite one currently salient example of the potential, consider the application of networked information technology to the apparently prosaic task of filling medical prescriptions. This process

3 Alan Greenspan often cites this effect, with the caveat that it does not eliminate the traditional business cycle but should work to dampen it significantly.

could improve in several ways. First, the doctor could prescribe via an electronic form that would be automatically forwarded to the pharmacist for fulfillment. Even such a simple step would largely eliminate the estimated 40 percent of prescriptions that now require reworking or follow-up. Second, an electronic record of a patient's other prescriptions would permit immediate identification of potentially harmful drug interactions as well as improper multiple prescriptions from several doctors. The process could be further enhanced by automated reminders to physicians of cheaper alternatives when provincial formularies provide them. And wireless devices could be used to send patients reminders prompting them to take their medication as scheduled.

The widespread deployment of such a procedure could save the Canadian health care system as much as $4 billion dollars annually.[4] This estimate is of direct savings — for example, reducing the emergency and hospital care that result from prescription noncompliance. It does not include the broader benefits of better overall health for Canadians or the reduction in indirect costs due to lost time and productivity of those who are sick.

For the most part, technology will not be the primary constraining factor in achieving benefits such as these when Internet access becomes virtually universal and costs continue to decline. Instead, the biggest challenge will be to work through the organizational and behavioural changes needed to convert institutionalized processes into their e-counterparts.

Policies

Canada has been a global leader in telecommunications, thanks in large part to policies that have fostered infrastructure investment, innovation, and, more recently, competition. For example, Canada was the first nation to connect every school and library to the Internet. It has also been a leader in the enactment of legislation to foster electronic commerce. Today, Canadian telephone and cable companies compete vigorously to deploy high-speed Internet access, with

4 Privately communicated estimates by McKinsey & Co.

the result that Canada has the world's second-highest penetration (behind South Korea), and double the US rate. This position will permit Canada to lead in selected areas of development of the next-generation applications that will exploit higher bandwidth.

Canada will, nevertheless, be challenged to keep its position in the vanguard of the Internet transformation. A large part of the potential problem stems from the limited size of the domestic market. Most Internet-related business models are strongly scale dependent since they tend to involve high fixed costs (for creating technology, writing new software, and developing content); the result is a growing advantage to markets in which those fixed costs can be spread across a broader base of domestic users. Of course, the Internet overcomes most of the usual constraints of geography and, in theory at least, turns the world into a "local" market. But with millions of websites competing for attention, brand and scale have become even more important in cyberspace than in physical space.

So how can Canada's Internet-related businesses achieve competitive scale? A promising strategy would be to exploit first-mover opportunities in application areas that can attract a global user base and then to use increasing returns to scale to build international market share through cost and performance leadership. Since a growing number of other small to mid-size countries — for example, the Scandinavian nations, the Netherlands, and Australia — will likely adopt a similar strategy, Canada must pick its spots and focus.

Government's most important contribution to this strategy, apart from supportive business framework and regulatory policies, would be as a lead user, kick starting significant market demand that was otherwise precluded by Canada's relatively small population. The broad public sector in Canada, including the federal, provincial, and municipal levels, commands enormous spending power and could, in principle, be the kind of sophisticated and demanding customer that is needed to turn domestic suppliers into world-class competitors.[5] Properly focused public sector demand could, without subsidy, stimulate the dynamic process of increas-

5 For example, public sector spending in health and education — both of which are information intensive and therefore amenable to Internet-based applications — was approximately $135 billion in Canada in 2000.

ing returns — continually falling average cost as output expands — and thus overcome the initial scale disadvantages of Canadian-based Internet businesses.

The potential application areas are extremely broad. Consider, for example:

- *Health care delivery.* The Internet could provide not only much-hyped applications, such as remote diagnosis, but, more significantly, applications in hospital administration and purchasing, drug prescriptions (as described earlier), out-patient monitoring, and so on.
- *Distance learning.* Already one of the Internet's fastest-growing applications for large businesses, distance education has enormous potential to turn the phrase *lifelong learning* from rhetoric into reality.
- *Defence and other security applications.* The distributed, redundant nature of the Internet permits it to continue to function even when damaged. In future, it will be an essential component of national security infrastructure.
- *Delivery of services to citizens.* The Internet is ideally suited to any interactive and information-intensive task, such as e-filing of taxes, applying for permits of all types, requesting information on public services, and so on.
- *Internal government operations.* The Internet has begun to transform the structure and function of all large organizations, and none is larger, more complex, or more in need of an internal nervous system than modern multilevel government.

This illustrative catalogue of potential Internet applications in the public sector points to the strategic potential of Canadian governments' taking a focused initiative to become world leaders in Internet-enabled public services. All stakeholders would benefit. Citizens would obtain richer and eventually more accessible services. The providers of public services would get growing efficiency and capability (which would translate eventually in greater value for taxpayers). And Canada's nascent Internet-based industry would gain a large and sophisticated base of demand.

A note of caution is nevertheless warranted. Although government stimulus via arm's-length purchasing is, in principle, preferable to subsidies or tax breaks, ample opportunity would remain for waste and mischief. As the checkered history of public procurement demonstrates, pork-barrel favouritism can be all too tempting. And even the most well-intentioned policy would have to strike a delicate balance to ensure value for taxpayers while giving Canadian suppliers some benefit of the doubt. Since the Internet-based public services envisioned here would usually be breaking new ground — part of the most fertile domain of innovation over the next several decades — public sector customers would have to work hand-in-glove with suppliers to develop the right services. The risk that such a relationship could become incestuous would be ever present.

In short, no policy is without risk, but so is the status quo. Fortunately, we have learned much, through hard experience, about the risks of public sector procurement. Processes to ensure transparency and accountability have substantially reduced abuses. But implementing the course advocated here would significantly broaden the scope of strategic procurement by the public sector in Canada and would consequently require policy innovation to ensure heightened vigilance.

Summary

Canadians have a once-in-a-generation chance to seize a moment of extraordinary opportunity in which the country's traditional strength in communications intersects a technological trajectory of unprecedented potential. Today's opportunity does not call for the creation of Crown corporations or the subsidization of national champions. On the contrary, the Internet transformation demands the innovative flexibility that only a competitive private sector can deliver. But Canada is still a smallish nation next door to a colossus. For that reason, we will always need something that might be called an *industrial policy*, even though that particular phrase is now largely discredited.

What I advocate here are proactive initiatives by the broad public sector to become world leaders in the application of the emerg-

ing Internet to the delivery of public services — whether in the domains of health care, learning, security, or the more efficient administration of government. Leadership in areas such as these would position Canadian businesses of all sizes to tap early into a world market of unlimited potential and to translate such first-mover advantage into the growing scale economies that characterize the information economy. The role of government in this new industrial policy is not that of *benefactor* but rather that of *customer*.

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Productivity and Demography: Twin Challenges for Canadians in the Twenty-First Century

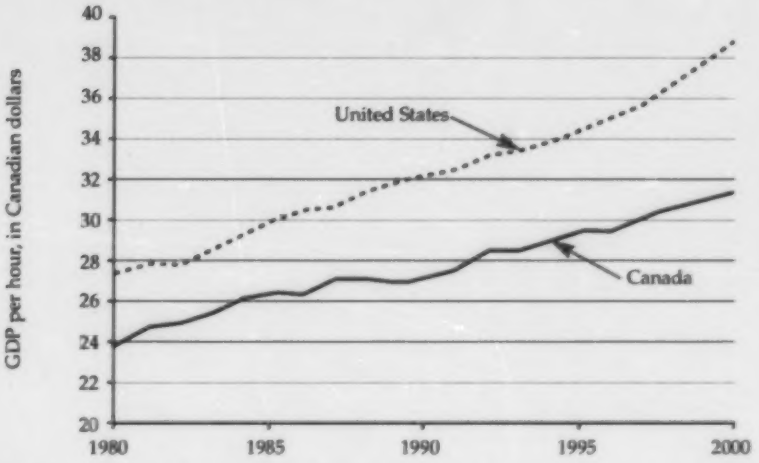
Jack M. Mintz

My two years at the Department of Finance as Clifford Clark Visiting Economist were focused on business tax reform, since, at the time, I was also chairing the Technical Committee on Business Taxation. From this experience, I gained an appreciation of the powerful effects that fundamental policy issues, such as debt relief and tax reform, can have on Canadian prosperity.

Productivity, a key for improving Canadians' standard of living, was often a major policy issue in the twentieth century. As we begin the twenty-first century, productivity continues to challenge Canadians, who have seen their incomes fall relative to those of people in many other economies that have enjoyed more robust growth. For example, in 2000, the Canada-US gap in gross domestic product (GDP) per hour was almost $9 per worker (in 1997 dollars), almost twice as much as in 1980 (see Figure 1).

Moreover, a new challenge is quickly becoming a major priority for Canadians. With an aging population and falling fertility rates, Canada, like other industrialized countries, will see its working-age population stop growing within two decades, making it increasingly difficult to support programs for the increased proportion of residents who are retired. Labour shortages, rather than unemployment, will be a grave concern. Although two decades is a long time ahead, the demographic challenge requires Canadians to engage in long-term planning now. Ignoring the demographic time bomb could seriously compromise our ability to improve our standard of living in the future.

Figure 1: ***Productivity in Canada and the United States, 1980–2000***



Note: Calculated in 1997 dollars using Statistics Canada's purchasing power parity exchange rate.

Sources: Canada, Statistics Canada; United States, Department of Commerce, Bureau of Economic Analysis; idem, Bureau of Labor Statistics.

Fortunately, the productivity and demographic challenges can be addressed by similar policies that will be described below. A key message is that Canada will need to adopt policies that encourage work, entrepreneurship, and investment if it wishes to provide a high quality of life for its citizens and to ameliorate the impact of demographic changes on Canadian society.

Fiscal Deficits, Taxes, and Productivity

A person's standard of living (and that of his or her dependants and of other nonworkers in the economy) depends significantly on the earnings received from his or her hours of work. The ability of a producer — a manufacturer or service company — to pay income to workers depends on the firm's capacity to produce goods and services from the contribution of its workers. *Productivity*, defined

as the value of the output of production divided by hours worked,[1] is a key in determining how much income can ultimately be paid workers as a reward. In turn, productivity levels depend on a large number of factors including:

- the efforts of workers during each hour that contribute to greater output;
- the skills of the workforce, derived from education and training, that can improve production;
- growth in capital, including equipment and structures that use the most up-to-date technologies to improve the production derived from workers' efforts;
- innovation and entrepreneurship that results in adoption of creative ideas to improve productivity;
- infrastructure, such as transportation and communication networks; and
- sound public policies that do not unduly interfere with the ability of workers and entrepreneurs to direct resources to the best economic opportunities.

In some respects, Canada has done reasonably well in encouraging productivity, although there is room for improvement. For example, ours is one of the world's best-educated work forces, and the graduation rate for postsecondary education is high. The country also has relatively good transportation and communications infrastructure.

In other areas, however, Canada's record is average or poor. Research and development expenditures (which contribute to innovation) have been typical for an industrial economy. However, the fruit of innovation, our growth in per capita incomes, was the fourth-lowest of all countries of the Organisation for Economic Co-operation and Development (OECD) in the 1990s (Fortin 1999). In contrast, Ireland, with research efforts similar to Canada's, was the fastest-growing industrialized economy in the same decade, with per capita incomes doubling over the period. Canada has lagged

1 An alternative definition is *total factor productivity*, which is the output derived from the use of labour and capital in production.

particularly in investment, which is critical for worker productivity and the adaptation of the latest technologies.

In my view, poor fiscal policies on part of governments have been most significant in impairing Canada's productivity in recent years. Tax policies have eroded productivity by reducing the incentive to work, to invest, and to take on risks. Further, tax, regulatory, and expenditure policies often have favoured less productive activities by supporting ailing industries and taxing most highly those business activities that are most productive. Government debt, which grew at a fast pace until the mid-1990s, has squeezed out capital investment.

By 1995, Canada had one of the highest levels of debt burdens among OECD countries — more than 110 percent of GDP. Even today, after several years of debt reduction by federal and provincial governments, Canada's total government debt-to-GDP burden is almost 80 percent, well above the level of most other industrialized countries.

Canada's tax burden is at an all time high. Total government revenues are more than 44 percent of GDP. In the mid-1960s, the tax burden was 30 percent of GDP, about five points higher than in the United States. Today, revenues as a percentage of GDP are more than 12 points higher in Canada than south of the border. Canadian governments take up a bigger share of the economy's resources than do governments in a number of other industrialized countries, including Australia, Iceland, Ireland, Spain, Switzerland, and the United Kingdom, most of which provide public services of comparable quality to Canada's.

The revenue from our high tax burden has often been wasted on ineffective public programs, rather than productivity-enhancing public services. Each tax dollar spent on poorly designed expenditure programs creates an enormous loss for the economy in terms of lost output.

The fastest growth in Canadian public expenditures has been in three items: interest expense on debt, social services — including unemployment insurance and provincial public welfare programs — and subsidies such as regional development programs. Canadian governments now spend less money per capita than do US gov-

ernments on health care, postsecondary education, and communications and transportation infrastructure.

During the past few years, federal and provincial governments have been adopting several fiscal policies aimed at improving Canada's long-run productivity. Governments have balanced budgets, reduced the debt burden, and cut taxes, especially personal income taxes and business taxes. However, the tax burden on capital and labour, even after the reductions, remains higher in Canada than in other parts of North America. Our tax revenues do fund important public services, such as education, social insurance, infrastructure spending, and health care, but even taking these benefits into account, by 2005 our fiscal policies, if unchanged, will impose a ten-percentage-point disadvantage on the cost on doing business in Canada compared with the United States (Mintz 2001).

Thus, we are not out of the woods yet. Businesses will locate in North America wherever they find significant advantages — a large market, skilled labour, cheap capital costs, good infrastructure, and nonintrusive government. The United States offers the breadth and depth of markets. Mexico, which is at a much earlier stage of development, has a low cost of production and has been substantially increasing its share of trade with the United States. Canada, with a small but well-educated population, offers some economic advantages, but many are similar to those found in other industrialized countries.

The danger for Canada is that we could be left out in the cold. The key to ensuring our productivity is to pursue economic policies that would engender a Canadian advantage for jobs created here to serve the North American market. Taking this approach would mean that our policies should be distinctive by operating better than those found in other countries and by improving Canada's productivity.

The Demographic Time Bomb

No more than two decades in the future, Canadians, as already mentioned, will face a demographic time bomb. With falling fertility rates and an aging population, a static work force will be supporting an expanding aged population.

A recent OECD study (2001) examines the possible impact of aging on the expenditure and tax policies of all OECD countries (assuming they undertake no offsetting policy actions, such as increasing the usual retirement age). According to this study, the news is far from good for Canada.

- Benefits for the elderly and health care costs funded by governments will rise from 11.4 percent to 21.4 percent of GDP by 2050.[2]
- Tax payments, as a share of the economy, will decline from 38.7 percent to 37.5 percent of GDP by 2050 (because people tend to have less income to be taxed after retirement).[3]
- Public expenditures on education and child benefits will decrease from 6.4 percent to 5.3 percent of GDP.
- Overall, Canada's fiscal balances (the difference between public expenditures and revenues) will worsen by 9.7 percentage points of GDP by 2050.
- To balance the budget, government revenues will need to rise from 44 percent to almost 53 percent of GDP by 2050.

Other industrialized countries face similar experiences. Canada's situation is particularly unfavourable, however, compared with that of our neighbour to the south. The OECD prediction is that US fiscal balances will worsen by five percentage points of GDP.[4] The Canada-US gap in government revenue burdens could thus rise from about 12 percentage points to almost 17 points of GDP solely because of demographic impacts.

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2 See also Robson (2001), who estimates that Canada's public health care costs will rise to 10 percent of GDP by 2040. Although Robson's assumptions differ somewhat from those of the OECD, the results are remarkably similar.

3 The OECD estimates include the cashing in of pension and other retirement savings, assets that Canadian federal and provincial authorities tax. Canada's revenue-to-GDP ratio, therefore, does not fall as much as that of some other countries.

4 The OECD forecasts that, by 2040, US health care costs funded by governments will rise from about 6.5 percent to more than 10 percent of GDP. The major difference between the Canadian and the US forecasts is that other elderly benefits, including old age security and pension benefits, will rise less quickly in the United States.

Therefore, one of the consequences of the demographic time bomb is that revenues, relative to the services governments provide the working population, may have to increase sharply, thereby impairing productivity in Canada. The demographic consequences could, however, be softened if people retired later and if greater capital investment took place, improving worker productivity. With higher incomes, the working population would be more able to support the elderly generation.

A Simple Plan

The difficult pressures Canada faces — low productivity and the demographic time bomb — need not be calamities if Canadian governments put in place today smart fiscal policies for the near and medium term.[5] The key is to encourage Canadians to participate in the work force, entrepreneurship, saving, risk taking, and investment. Here is my three-point plan for upcoming budgets.

We need smart debt policy.

The demographic time bomb can be partly avoided if we cut debt seriously over the coming years. Canada should target reducing total government debt to less than 25 percent of GDP by 2015. The savings in interest would make room for major tax cuts and free funds for the payment of elderly benefits to our aging population. On average, Canadian governments should be operating $15 to $20 billion surpluses over this period. But since debt is unlikely to be cut in this current year, governments would need to run larger surpluses when the economy begins to reach its potential.

We need smart tax policies.

If Canadians want to improve the country's productivity and ensure that sufficient resources are available to meet the needs of the aging population, we should overhaul our tax system. The

5 Some of the content of this section is presented in more detail in Mintz (2001).

existing one undermines productivity by discouraging investment, saving, risk taking, and entrepreneurship. Governments simply demand too much money from the population. High marginal tax rates, especially for low-income workers, deter people from seeking opportunities to improve their incomes. Taxes on savings deter people from setting aside funds for their future retirement and medical and other contingency needs.

Instead of taxing individuals on what they contribute to production, we should tax what they consume. Taxes related to consumption could be accomplished in several ways.

First, we should make much greater use of consumption taxes, such as excise taxes and value-added taxes, to replace inefficient instruments, such as taxes on capital, and high marginal tax rates, often applicable at low income levels, not just at the top end. The federal goods and services tax, though much disliked, is an appropriate levy to fund expenditures in an open economy such as Canada. Provincial sales taxes should be converted into value-added taxes, following the approach taken either by Quebec or by three of the Atlantic provinces. Excise taxes, particularly in the form of environmental taxes on toxins and energy consumption, could accomplish social and tax policy objectives (see Canada 1998).

Second, we should convert our income tax to an expenditure tax. The current system discourages savings since those who consume their paycheques immediately pay tax only once, while those who a portion for future consumption pay tax not just on their earnings but also on their investment income from such earnings. An expenditure approach to taxation could be accomplished in two ways. One would be to expand the tax deductions permitted for contributions to registered pension and retirement savings plans. After all, expenditures are simply income minus savings. Thus, when people save money, they could deduct such savings from earnings without facing limitations. When withdrawals were made from registered plans to provide consumption, these amounts would be fully subject to tax.

An alternative approach would be to allow individuals to invest in assets, taking no deduction for contributions but paying no tax on withdrawals from plans. If we can assume similar tax rates over time, the current value of taxes individuals paid on their

consumption would be the same. Such an approach would be worthwhile for individuals with growing incomes or for some assets — an example is consumer durables such as housing — that are not easily subject to tax.

Third, we should tax the consumption of public goods and services by resorting more to the user-pay principle. In the interests of fairness, individuals who derive greater benefits from public programs should contribute more toward their costs. Since the public sector already provides (or could provide) many services, such as in health care, education, and infrastructure, pricing them to some extent would not be difficult.

Thus, the use of tuition fees for education, tolls and gasoline levies for highways, municipal infrastructure charges, waste management fees, water pricing closer to full cost, and variable premiums for insurance programs such as unemployment insurance and health insurance would be appropriate sources of levies for governments. The tax system would be more efficient and fair because people would contribute to program costs according the benefits they received from a particular service. Lower-income Canadian families could be protected from user fees with greater support programs, and increasing competition in the provision of public services by agencies could help to control costs that would affect user fees.

Fourth, we should eliminate corporate income and capital taxes on business investments and establish a neutral system that taxed businesses on the basis of their use of public goods and services and on their value added (Bird and McKenzie 2001). A business value tax could be applied on a broad base so that firms paid tax on their revenues from the sale of goods and services and deducted, in lieu of the existing depreciation and interest expenses, the cost of noncapital and capital purchases. (Payroll costs could also be nondeductible in lieu of the some current taxes on labour.) This form of tax would not discourage capital investments since firms would be able to expense the full costs incurred.

One result of such an overhaul of the tax system would be a substantial increase in the incomes of all working Canadians, as Canada became a nation of unequalled attractiveness for capital investment and innovation.

We need smart expenditure programs.

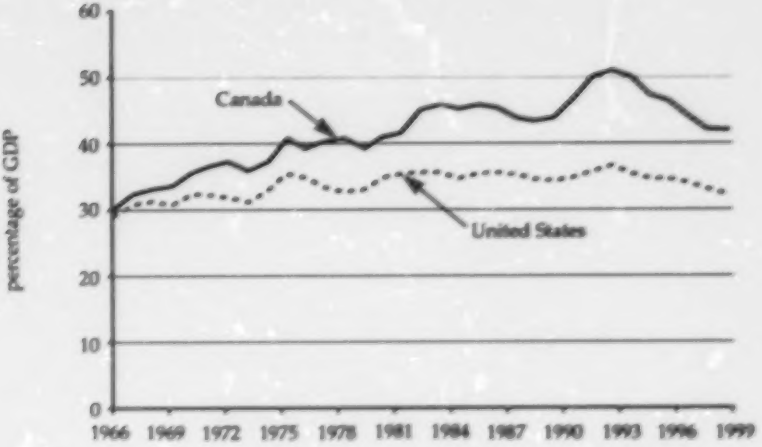
Public services enhance productivity if they are provided efficiently. If programs are ineffectual and inefficient, however, they impose a large burden on the economy since the taxes needed to pay for them discourage work effort and investment in the private sector.

That Canadian governments are too small today is a myth. Canadian governments (federal, provincial, and municipal) spend about 42 percent of GDP on public programs and interest expense. In contrast, US governments spend much less — about 31 percent of GDP (see Figure 2). This 11-percentage-point gap is fairly new and has not arisen because of Canada's treasured public health care. The two countries' sets of governments were of similar size in the late 1960s when most of our important public expenditure programs, including medicare, the Canada and Quebec Pension Plans, and unemployment insurance, had already been introduced. The increased gap in the size of government has not come from faster growth in expenditures on education, health care, infrastructure, or defence. Instead, almost half of the gap is explained by public debt charges that rose far faster in Canada than in the United States. The rest of the gap is due to spending on social services (especially unemployment insurance) and regional community and environment expenses that have accelerated in Canada much more sharply than in the United States.[6]

Surely, the problem is with the efficiency of Canadian governments, not with the amount of tax revenues available to them. They must focus on their responsibilities and provide effective productivity-enhancing services, economic and social, that strengthen the economy. To achieve effectiveness and efficiency in program delivery, governments should use best practices. For example, they could improve the supply of work effort by ensuring that social programs effectively provide minimal deterrents for work effort. As a case in point, social insurance programs, such as unemployment insurance, workers' compensation, and public pension plans, should

6 The growth in public expenditure in Canada compared to that in the United States is explained in more detail in Mintz (2001, 39–47).

Figure 2: ***Total Government Expenditure, Canada and the United States, 1966–99***



Source: OECD, *National Accounts*, various years.

operate to encourage businesses and individuals to adopt practices that lessen layoffs, disability claims, and early retirement. Governments should also avoid providing firms with ineffective business subsidies and other targeted incentives that raise salaries or capital costs, rather than spur economic activity. Canada's programs should be designed to reward excellence, not mediocre performance.

Too often, commentators propose programs without knowing that they would actually work. The providers of public programs should continuously review them with the notion of eliminating ineffective ones. Governments could reduce the need for revenues if they reallocated spending from inefficient programs to priority areas.

Conclusion

With economic integration growing at the international level and within North America, economic prosperity requires making Canada an attractive place for job creation. Given the recent fall in Canadians'

standard of living relative to that of people in other countries, Canada's economic drift could result in its competing with low-wage countries for less-skilled jobs, rather than with high-wage countries that attract skilled labour. Canada needs to create its own advantage by tilting the playing field in its favour within North America.

Government fiscal policies are key to creating that advantage. Until recently, high debt, high and inefficient taxes, and inefficient public service delivery have frustrated our opportunities to create distinct Canadian advantages. Further action is necessary, especially in light of the demographic trends. If Canada wants to stand out, the objective should be not only removing disadvantages but also creating fiscal advantages.

Canada could and should create fiscal advantages by sharply reducing debt over time, undertaking substantial tax reform to encourage investment and entrepreneurship, and operating the most efficient expenditure programs in the world. Aggressive fiscal policies could mark Canada as the place to do business in a competitive global environment.

Better fiscal policies will not, however, be easy to accomplish. To achieve success, Canadians need to agree that better debt, tax, and expenditure policies would provide a basis for achieving long-run opportunities for a high standard of living. With the storms lying ahead — slow productivity and the demographic time bomb — I believe that Canadians could reach a consensus that one of the best answers for securing economic growth is for governments to pursue smart fiscal policies.

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Canada's Tax and Spending: Making Wise Choices?

Robert D. Brown

During my tenure as a Clifford Clark Visiting Economist, the Department of Finance frequently had to deal with myriad issues that related, directly and indirectly, to the perennial problem of struggling to improve the well-being of Canadians while maintaining some elements of a distinct national identity and choice in an increasingly globalized world.

Over the years, Canada's choices in fiscal regimes — in both taxation and government spending — have differed from those of the rest of the world, particularly from those of the United States, the country with which we have unusually close economic and social ties. Our distinctiveness, our independence, and our measures of how well off our citizens are, tend to be benchmarked against our neighbour to the south.

But to be different is not enough. The question is whether our differences have always been wise.

Higher Taxes Are Canadian

For tax burdens and government spending — measured as a percentage of gross domestic product (GDP) — Canada is, in fact, toward the middle of the pack of the developed countries. Our overall tax levels are lower than those in Germany, Sweden, the Netherlands, and Finland. But we pay higher taxes than do residents of the United Kingdom, Australia, and New Zealand, all of which manage to have reasonably good public services, including education and health care. Despite these global comparisons, the

important issue for most Canadians seems to be how our tax burdens compare not with those of the rest of the world but with those of the United States, which so hugely influences not only our economy but also our perceptions.

In the 1950s and early 1960s, Canada's overall tax load — taxation revenues as a percentage of GDP — was equal to or even slightly less than that of the United States. But for the past 40 years, Canada's tax burdens have risen relentlessly relative to those of the United States, as shown in Figure 1, and are now running a massive 9 or more percentage points higher. This substantially larger tax burden is particularly evident in personal income taxes, where Canadian's burdens have moved ever higher relative to Americans'.

Tax burdens in Canada that are higher than those in the United States affect more than our disposable incomes and personal perceptions of well-being. High taxes tend to discourage personal initiative and savings, and high tax burdens on businesses reduce international competitiveness and job creation. Particularly in an integrated North America economy, uncompetitive tax burdens on both business and labour result in a relatively poor economic performance. During the past three or four years, federal and provincial tax rates have declined in Canada, as we finally put our fiscal houses in order and balanced our budgets. But taxes have also fallen in the United States and other countries, so our relative position has not changed much.

But Both Taxes and Benefits Count

Any analysis of the effects of relatively high taxes in Canada must take into account the benefits those taxes provide. If Canadians secure better benefits and services in education, health, pensions, income security, and infrastructure, their personal well-being is enhanced, and in some cases the country's economic performance improved. In those circumstances, paying higher taxes does not harm competitiveness or real living standards in the long run.

But if our higher taxes are used to pay for programs of dubious economic or even social value or to cover the costs of misguided government economic intervention, we are clear losers.

Figure 1: ***Total Tax Revenue as a Percentage of GDP, Canada and the United States, 1966–99***

Source: OECD, *Revenue Statistics, 1965–2000.*

Why Do We Pay Higher Taxes?

The usual reason given for our higher tax burden in Canada is that ours is a kinder, gentler society, spending more of its resources on social services and the disadvantaged. But we do not always stop to check the facts when we make that kind of statement.

Health Care

For example, a traditional myth in Canadian political debates is that taxes higher than those of the United States are required largely to finance our comprehensive health care programs, which benefit all citizens. But, in fact, our higher tax burden has little to do with our health care system. Canada's public spending on health care currently runs only about half a percentage point of GDP more than that of the United States, and was actually lower than that country's for several years.

Of course, Americans spend substantially more private funds on health care than do Canadians. Overall, Canada gets a comprehensive health care system for its public money, while the less effi-

cient US system provides only a patchwork quilt, with lots of holes, for almost the same public cost. Indeed, the efficiency of Canada's system stands out best against that of the United States. Many other developed countries spend less of their national income on health care services than does Canada without their citizens' suffering from any observed worse health outcomes.

Overall, Canada's approach has given us a relatively uniform health system, increasingly frayed around the edges and flashing danger signs as to its long-term viability. The United States provides the best health care in the world for its affluent or well-insured citizens, with significantly less comprehensive services for others and at a staggering overall cost. The Canadian system does give us a competitive advantage through lower employer health insurance premiums and personal costs — but it does not explain our higher tax burdens.

Social Spending

Canada has been spending relatively more than the United States on social welfare and support, although the difference has become major only over the past 20 years.

If one takes into account a broad measure of all our income support and benefit programs (including old age payments, child subsidies, family programs, welfare, and employment insurance), as well as spending on health and education, Canada's total public social spending has averaged some 4 percentage points of GDP more than that in the United States over the past 20 years. (Table 1 sets out the Canada-US comparison in public social spending for 1998.) But these 4 percentage points of additional social spending are not enough to explain why Canadian tax burdens over the same period have averaged 9 to 10 points of GDP more than in the United States — particularly since that country spends about 3 points more than Canada on defence.

Interest Payments

If our higher tax burdens cannot be explained (or fully explained) by our higher social spending, what, then, is their cause? The first

Table 1: ***Public Expenditures as a Percentage of GDP, Canada and the United States, 1998***

Spending Category	Canada	United States	Canada–US Gap
	(% of GDP)		*(% points)*
Education	5.7	5.1	0.6
Health	6.4	5.9	0.5
Other social spending[a]	11.6	8.7	2.9
Total social spending	*23.7*	*19.7*	*4.0*
Defence	1.1	4.0	2.9
Net interest on debt	5.0	3.2	1.8
Subtotal	*29.8*	*26.9*	*2.9*
All other spending	12.2	5.9	6.3
Total government expenditures	*42.1*	*32.8*	*9.3*

a Including old age support, family and child payments, employment insurance, disability and injury costs, labour market programs, and so on.

Sources: Data on education, health, and social spending from OECD publications; on interest from OECD, *Economic Outlook* (Paris: 1999); on defence spending from Statistics Canada, CANSIM database and United States, Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States 2001*.

reason is that Canadian governments — federal and provincial — have in the past let their spending and intervention run virtually out of control, making only the weakest efforts to ask citizens to pay currently for programs and benefits. As a result, Canadian governments ran many years of horrendous deficits — far higher in relative terms than those of US governments. Some of the excessive spending was noted at the time as an "investment" in our future, but given our anaemic record of income improvement since, it was an investment with a very poor payback.

As a result of these past deficits, we now face high interest costs on a massive public debt. Having to use high taxes to pay interest costs on past deficits is a heavy burden on Canadians since the interest rate on the debt exceeds the rate of economic growth. Even after recent surpluses and debt paydowns, interest charges alone still absorb a quarter of federal revenues. (See Figure 2, which compares gross public debt interest as a percentage of GDP in Canada

Figure 2: ***General Government Gross Debt Interest Payments as a Percentage of GDP, Canada and the United States, 1966–98***

Source: Department of Finance, *Economic Review*, various issues.

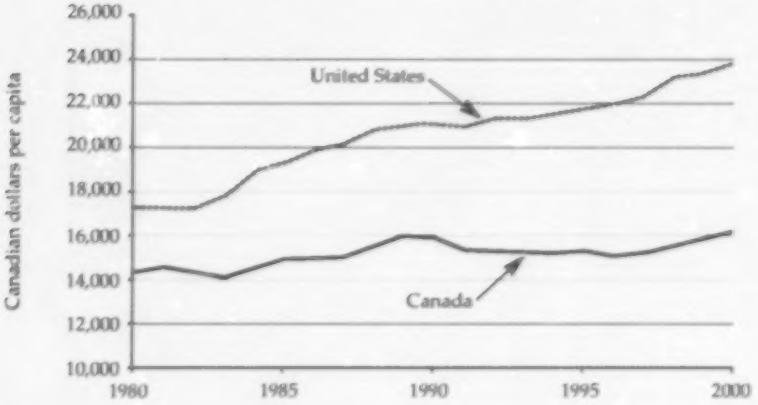
and the United States over the past three decades.) Our gross mismanagement of public resources in the 1970s, 1980s, and early 1990s made all Canadians poorer and even put in peril some of our cherished social programs.

Slow-Rising Personal Incomes

Another cause of our higher tax burdens is the fact that, in recent years, the US economy has been growing faster than Canada's, so that over time the same tax burden in real per capita dollars takes a lower percentage of rising incomes south of the border. (Until the past three years, Canadian real personal incomes were relatively static at best, providing little opportunity for lower tax rates, while in the United States, rising real incomes and therefore buoyant tax revenues gave some room for tax rate reductions.)

One of the prices Canadians pay for having lower incomes is that the cost of a given real level of services can be higher here when measured as a percentage of GDP. To take just one example, total government spending on education in Canada, measured as a percentage of GDP, is appreciably above that in the United States.

Figure 3: ***Personal Disposable Income per Capita, Canada and the United States, 1980–2000***



Note: Constant 1997 Canadian dollars, using Statistics Canada's purchasing power parity exchange rate.

Sources: Statistics Canada; United States, Department of Commerce, Bureau of Economic Analysis.

(Again, our southern neighbour spends far more in private funds.) But with its higher incomes, the United States spends *more public dollars per student* than does Canada.

Our relatively poor long-term performance in terms of real personal incomes, if it continues, could put us in danger of finding ourselves with education and other social support systems that do not keep pace with those of the United States or elsewhere. (The widening Canada-US spread in real personal disposable income, measured at purchasing power parity, is shown on Figure 3.) Over the past 20 or so years, real incomes in Canada have fallen against those in the United States and many other countries. Despite recent modest improvements, the result of this relative decline, along with the constrained fiscal resources of governments, has strained our social support structure. Canada's relatively poor economic performance has already reduced both our ability and our willingness to implement the kinder, gentler society we like to think of as being part of our distinctive heritage.

Other Spending

A final and important cause of our higher tax load is that Canada has higher general program spending than the United States. In addition to our higher general social support, we spend relatively more on aid to low-income regions, aboriginals, economic adjustment programs, so-called business supports, and a wide range of other activities.

An instructive exercise is to compare Canadian and US total government spending by category. If one *excludes* spending on what can be regarded as basic or core government services — health, education, and other social benefits, as well as defence — and also excludes the cost of interest on the national debt, the residual is the cost of all other government programs. In Canada, this residual (shown in Table 1 as "all other spending") is more than twice as high as in the United States — 12.2 percent of GDP versus 5.9 percent. Perhaps our distinctiveness rests not so much on our health system or social programs as on our attachment to miscellaneous and unfocused government spending.

What Do We Really Get?

The issue of what Canadians get in exchange for taxes is a broader and more complex question than this brief essay can deal with. But critics have a growing apprehension that we may not be getting full value for our money, whether that value is measured in economic or in social terms. Our high social spending falls far short of explaining our higher taxes, so regardless of how we value our social safety net, it alone cannot justify the negative influence of our tax load. The overall lesson is clear: high government spending and intervention do not, in themselves, produce economic or social prosperity.

In Canada, too much of the debate on the role of governments and on social priorities has focused on inputs — how much we spend. But in a world where resources are always constrained, we need to pay more attention to outputs — what we achieve with our spending programs.

Spending on aboriginals has been one of the fastest-growing expenditure programs, but many in our native population are still

poverty stricken, and higher spending seems to produce relatively little change. Like the United States, we spend more on health care than most other developed countries, but North Americans do not live longer or have a higher quality of life in health terms than people in some countries that spend less. We provide low-income regions with massive direct and indirect support (through such measures as employment insurance), but without totally breaking their cycle of poverty and missed opportunities. Even our vaunted social sensibilities and relatively high spending on support for low-income Canadians come with conditions that make it hard for people at the bottom of the income scale to emerge from poverty. We provide more government tax credits and other support for research and business innovation than most other countries, but total research and development activities in Canada are far from notable by world standards.

What is ultimately important is what we achieve through our tax and spending policies, not just what they cost. More emphasis on measuring the results of government spending programs would allow us to improve their efficiency and effectiveness, so we would get more from their inputs. And measured results would also improve the public accountability of those programs.

Poor Productivity and Income Performance

The core issue is not the level of tax burdens or spending programs but citizens' standard of living. Real disposable (after-tax) incomes are, of course, directly affected by government taxes and benefits. But in the longer run, the prime economic determinants of living standards are personal productivity and labour force participation rates (the percentage of the population actually working).

The reasons for our relatively poor performance with respect to incomes and productivity are many and complex. But among those causes, the following may stand out.

- High taxes have weakened incentives for investment and growth. The working poor in Canada are particularly disadvantaged because they face extraordinarily high marginal tax and benefit clawback rates. And high (although variable) taxes on business

have put Canadian producers at a distinct disadvantage with competitors abroad, an issue that is only beginning to be addressed.

- Low labour force participation rates, influenced by both high tax rates and perverse social support systems, are holding down our productivity. In the longer run, demographic trends involving an aging population will weaken it still further.
- Overly paternalistic and counterproductive use of public resources has emphasized protecting Canadians from change, rather than helping them to adjust to that change.

Layered on top of all these problems is the way that diversity, the hallmark of Canada, has led to dysfunctional federal-provincial power conflicts, which prevent us from optimizing our resources. The provinces claim that federal interference in a range of jurisdictional areas has interfered with their ability to fulfill their responsibilities. But to date, the arguments seem to concentrate on squabbles about funding and on provincial "fed bashing." The provinces have not articulated any clear vision of what they would do better in the absence of federal influence.

Further, the federal government could be criticized for not exerting *more* authority on other issues, such as removing interprovincial trade barriers that interfere with the optimum allocation of resources in Canada. Our failure to establish a national securities administration makes our capital markets less efficient. And in post-secondary education — key to coping with the new economy — we are still struggling to put in place national priorities.

The United States, with all its many flaws, seems to be able to handle at least some reforms more quickly than Canada. The US welfare reform of 1995 (under a Democratic president) cut that country's welfare rolls by more than half. The reform is most significant not because of its cost savings but because of its effect on labour force participation and personal responsibility.

Tradeoffs

Of course, our distinctive Canadian approach has secured us some advantages. Our after-tax income distribution is significantly more

equal than that of the United States — and in the past few years, income disparities have widened more there than they have in Canada. The relative universality of our health and education support is admired by many. Overall, our more progressive tax system and our income-support programs have resulted in a more equal society (but perhaps one that is no more cohesive than that of the United States). The question that Canadians have to ask is: could the advantages we seek in our social programs be obtained at a lower economic cost?

While each society must make its own choices on the extent to which it pays higher taxes in order to finance expanded government services, the tradeoffs are not easy or simple. Choosing a model that involves higher taxes to finance higher social transfers can result in lower growth and lower personal income relative to the position that would have been achieved if taxes had been lower; this outcome, in turn, will adversely affect future social spending. The costs of higher taxes will be even greater if government makes efforts to impose these higher burdens on businesses or capital since such burdens will reduce competitiveness and jobs.

Paying more in taxes to provide higher social benefits is still a possible choice for Canadians, but they should clearly understand the implications of that choice.

Efficiency and Focus Can Be Canadian

In the near term, a slowing economy and the aftermath of September 11 will increase the pressures on Canada to deal with our limited fiscal and other resources with efficiency and with focus on tangible results. But our traditions of diversity and division seem to hamper our ability to handle hard choices. The typical Canadian characteristics of endless consultation, compromise, and confusion are not well suited to the requirements of the new millennium.

Canada still differs from the United States and other countries in our fiscal values, and we do want the right to make different choices. But we need to think more clearly about the way we manage those choices. Efficiency, effectiveness, and focus are not nasty words, inconsistent with Canadian values. Rather, they are the levers to make those values real.

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Canadian Conundrums

Views from the *Clifford Clark Visiting Economists*

Robert D. Brown, editor

Clifford Clark, Canada's deputy finance minister from 1932 through 1952, is often referred to as the father of the modern Department of Finance and of its strong influence on federal programs and policies. In his honour, in 1983 the department created the position of Clifford Clark Visiting Economist to provide senior policy input from outside Ottawa into the department's planning and studies. The post is a fine example of the cross-fertilization of ideas that can contribute to better public policy.

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Robert D. Brown, the editor of this volume, is a corporate director and consultant, Chairman of the Board of Residential Equities Real Estate Investment Trust, former chair and chief executive officer of Price Waterhouse (now PricewaterhouseCoopers), and former chair of the Canadian Institute of Chartered Accountants, the Canadian Tax Foundation, and the C.D. Howe Institute. He was also a Clifford Clark Visiting Economist from 1998 to 2001.

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